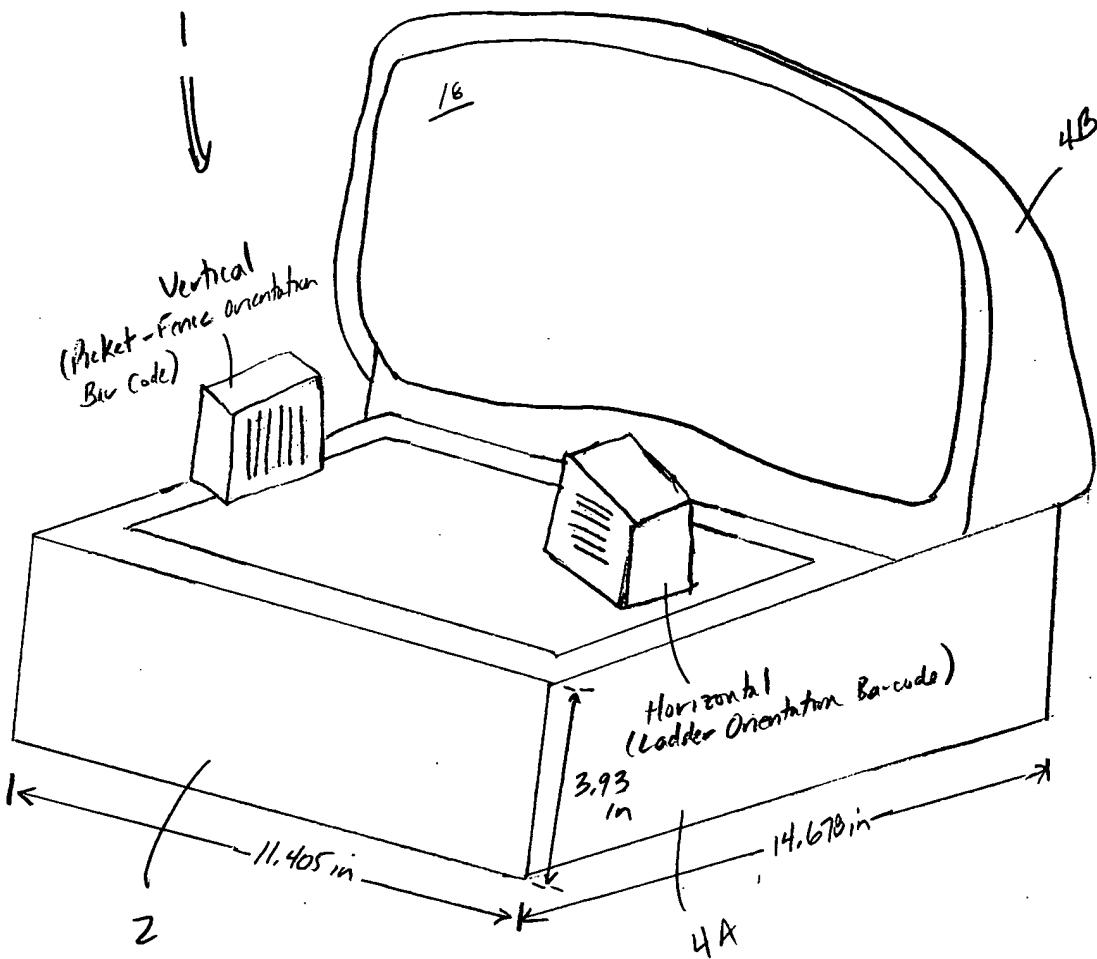


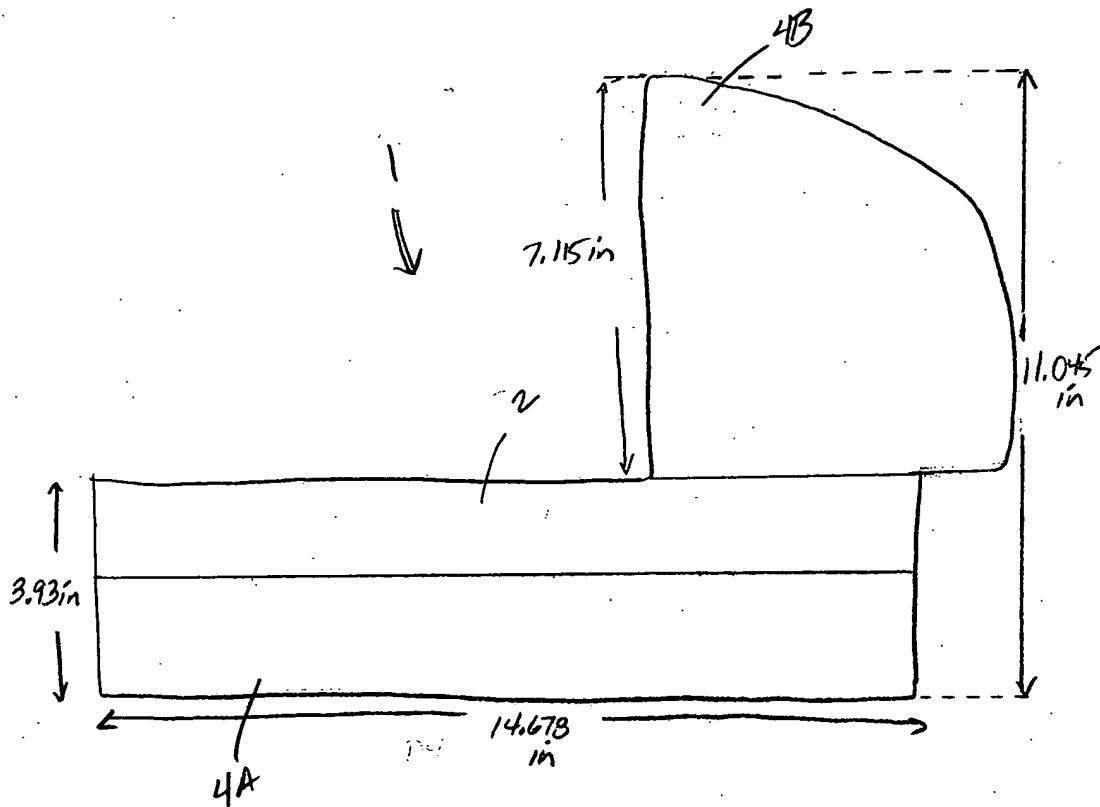
1/80

FIG 1A



2/88

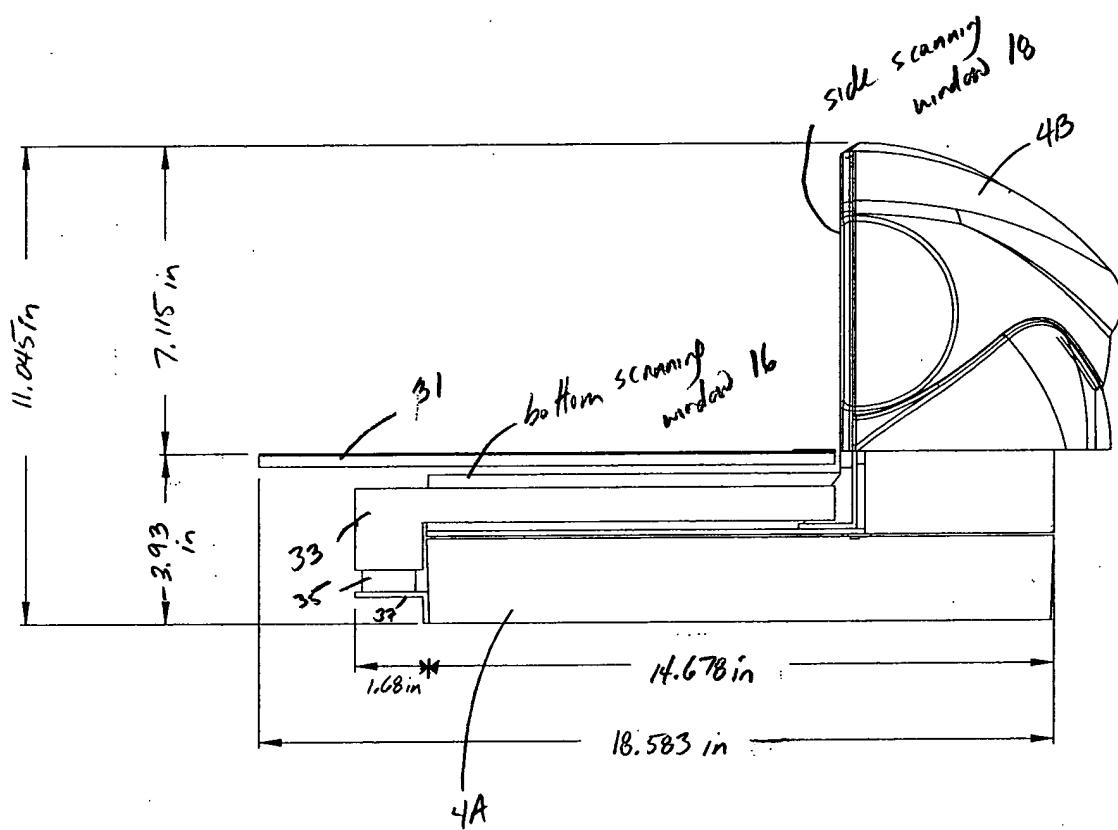
FIG. 1B



3/88

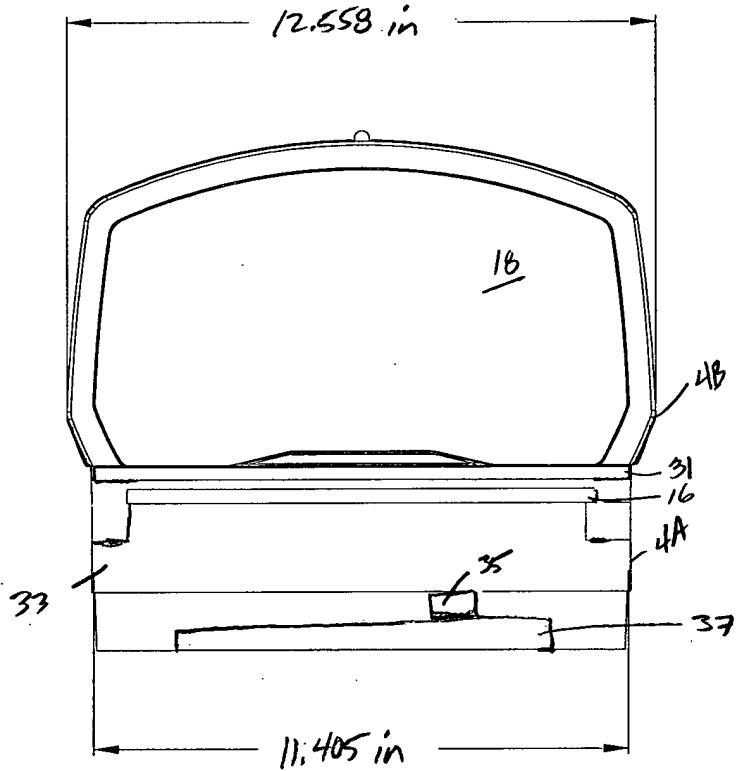
FIG. 1C

CONFIDENTIAL



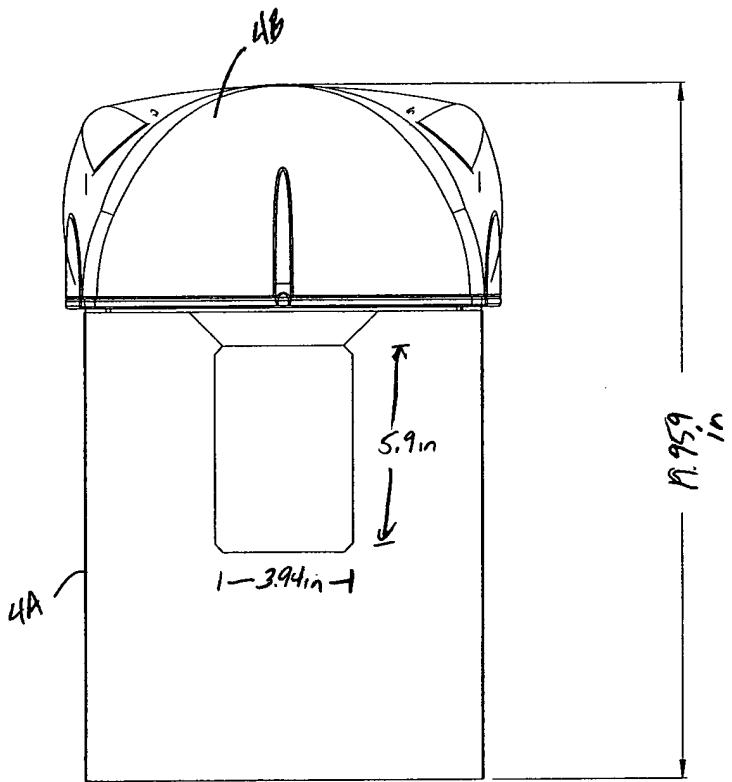
4/88

FIG. 1D



5/08

FIG. 1E



6/90

FIG. 1F

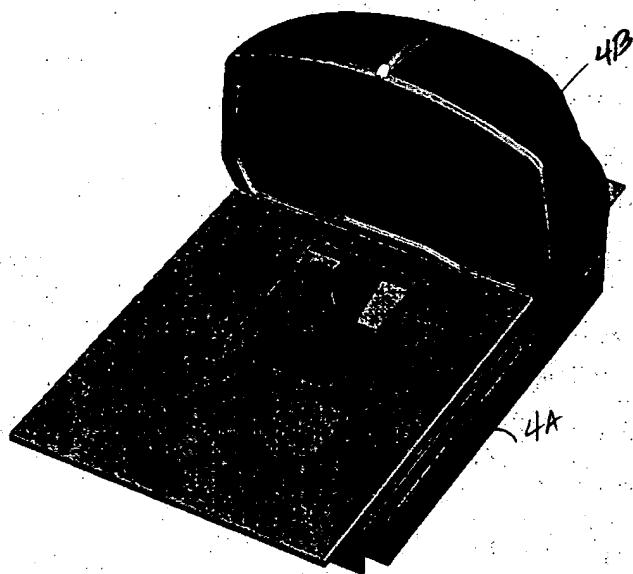


FIG. 1G

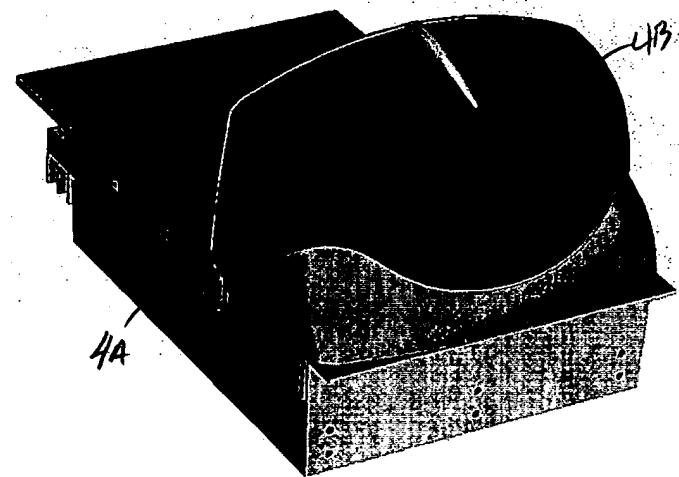
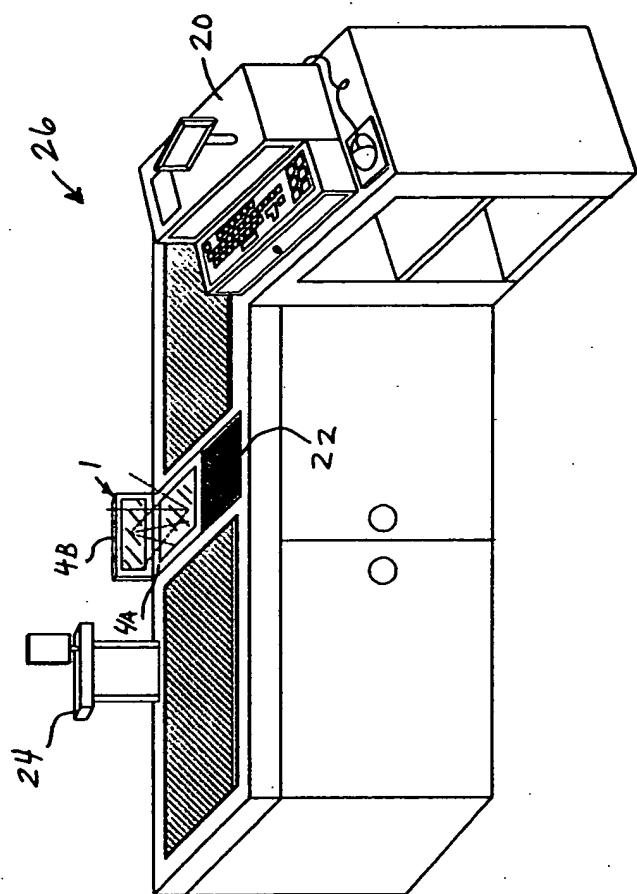


FIG. 14



7/88

8/88

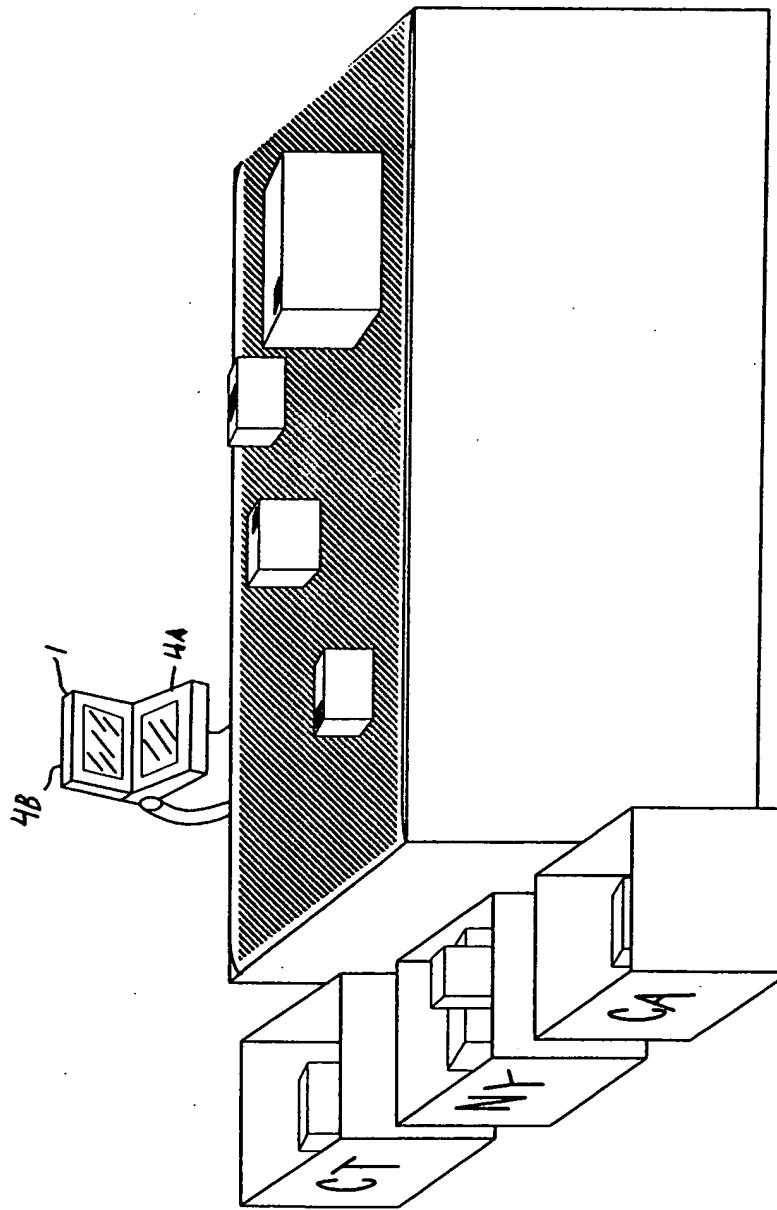
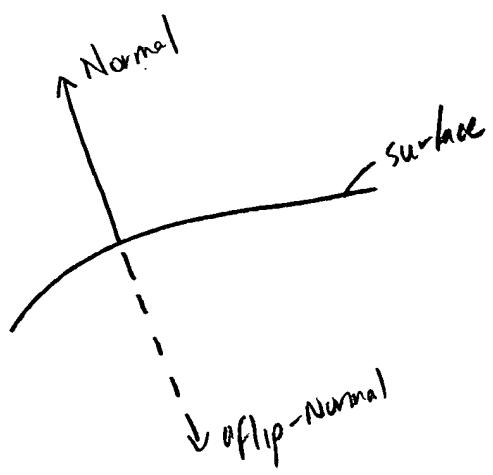


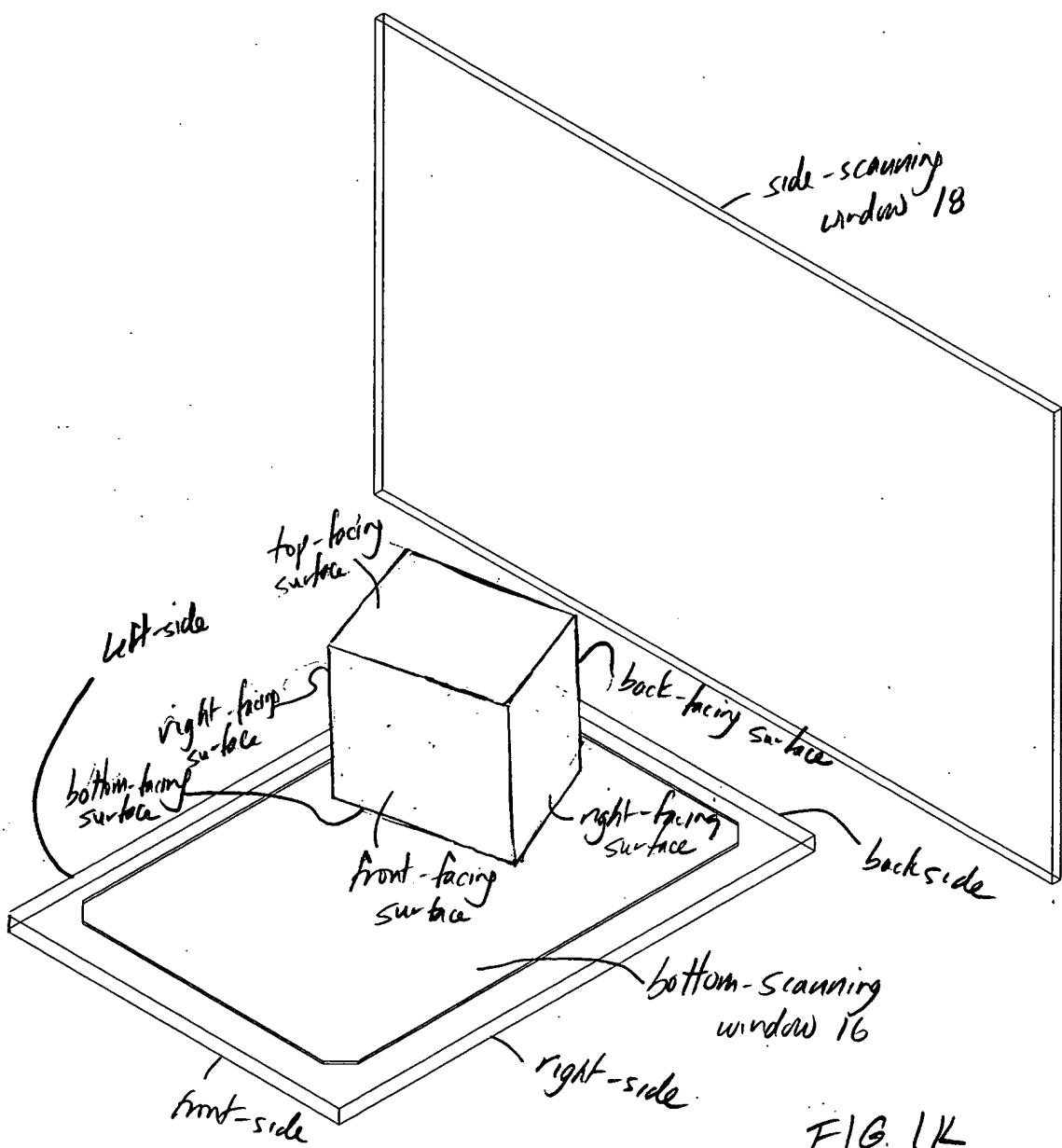
FIG. 15

9/88

FIG. 1J



10/88



11/89

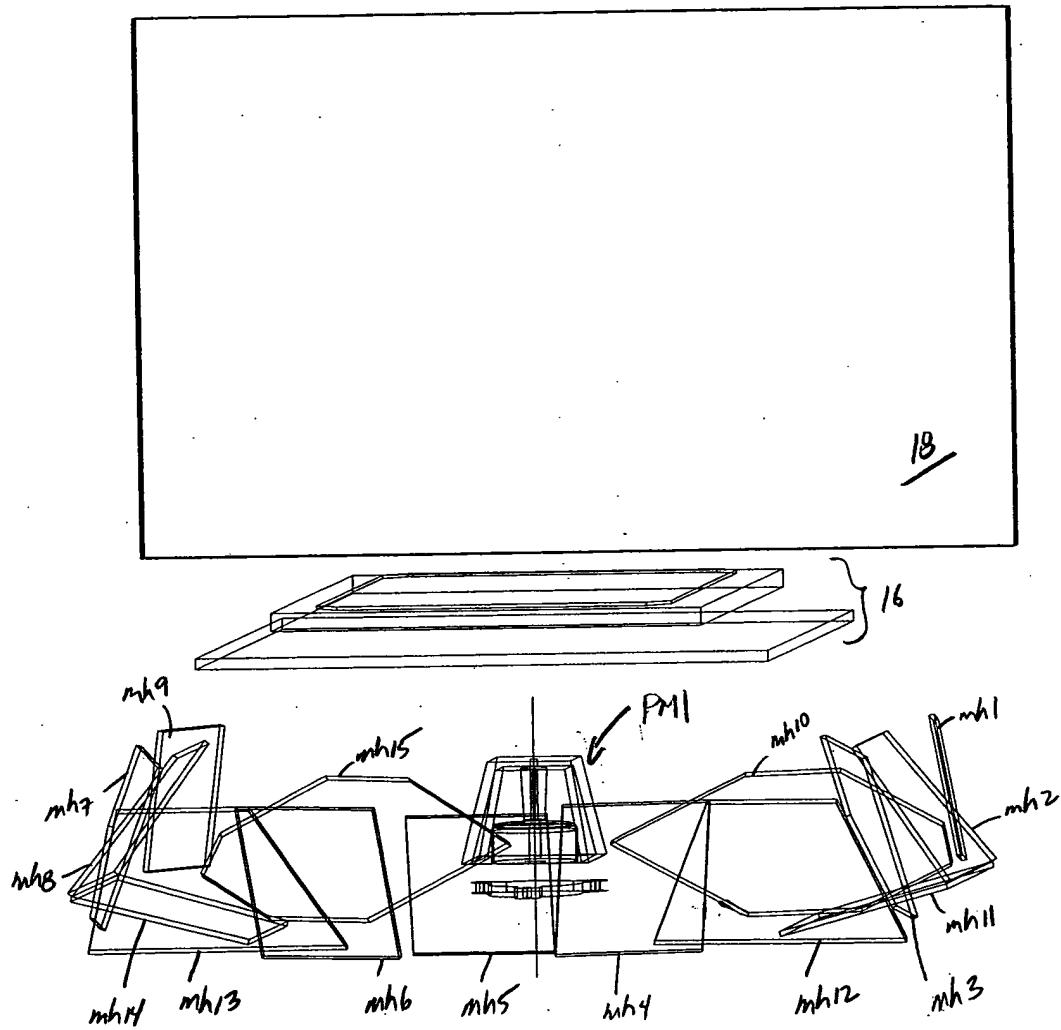


FIG. 2A

12 / 08

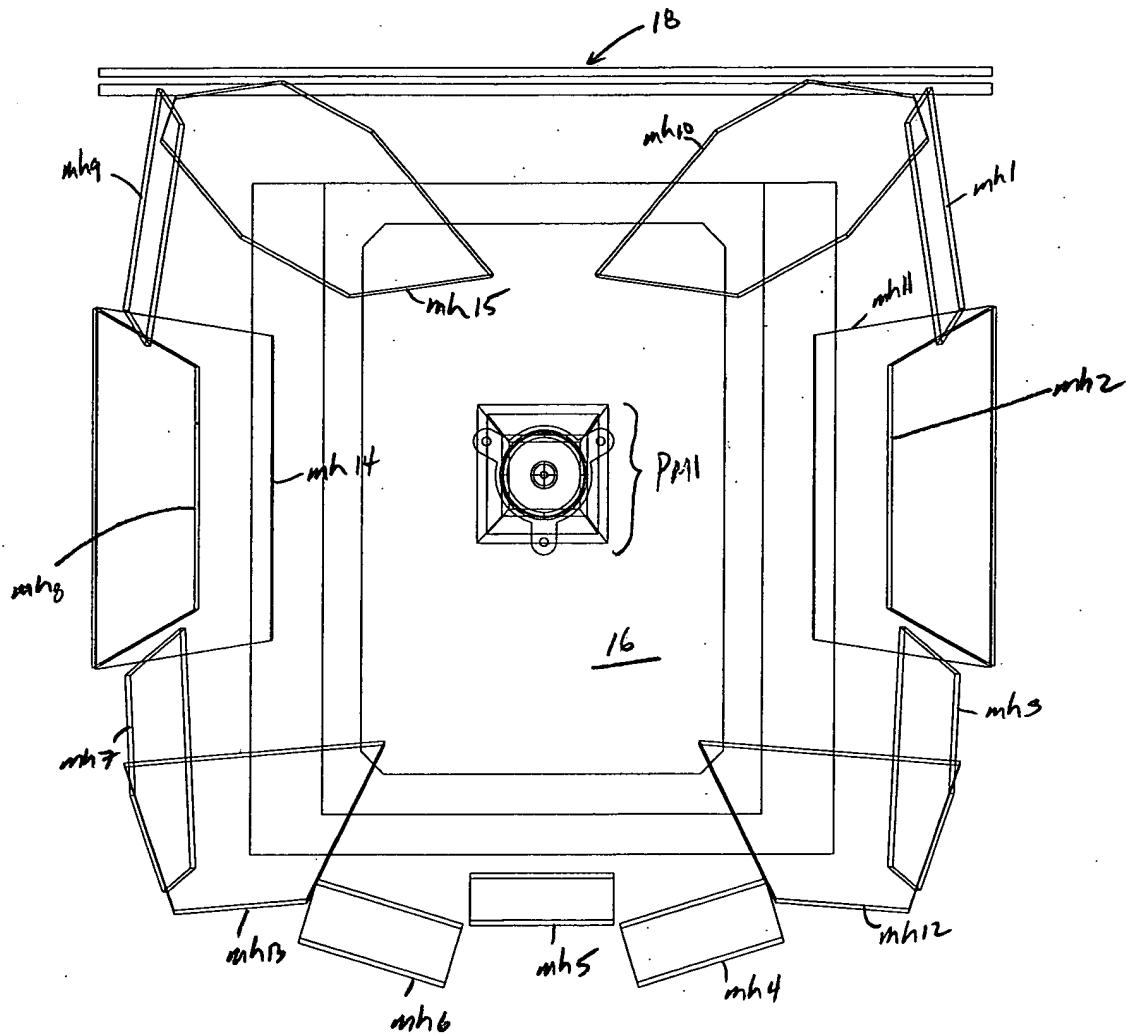


FIG. 2B

13 / 88

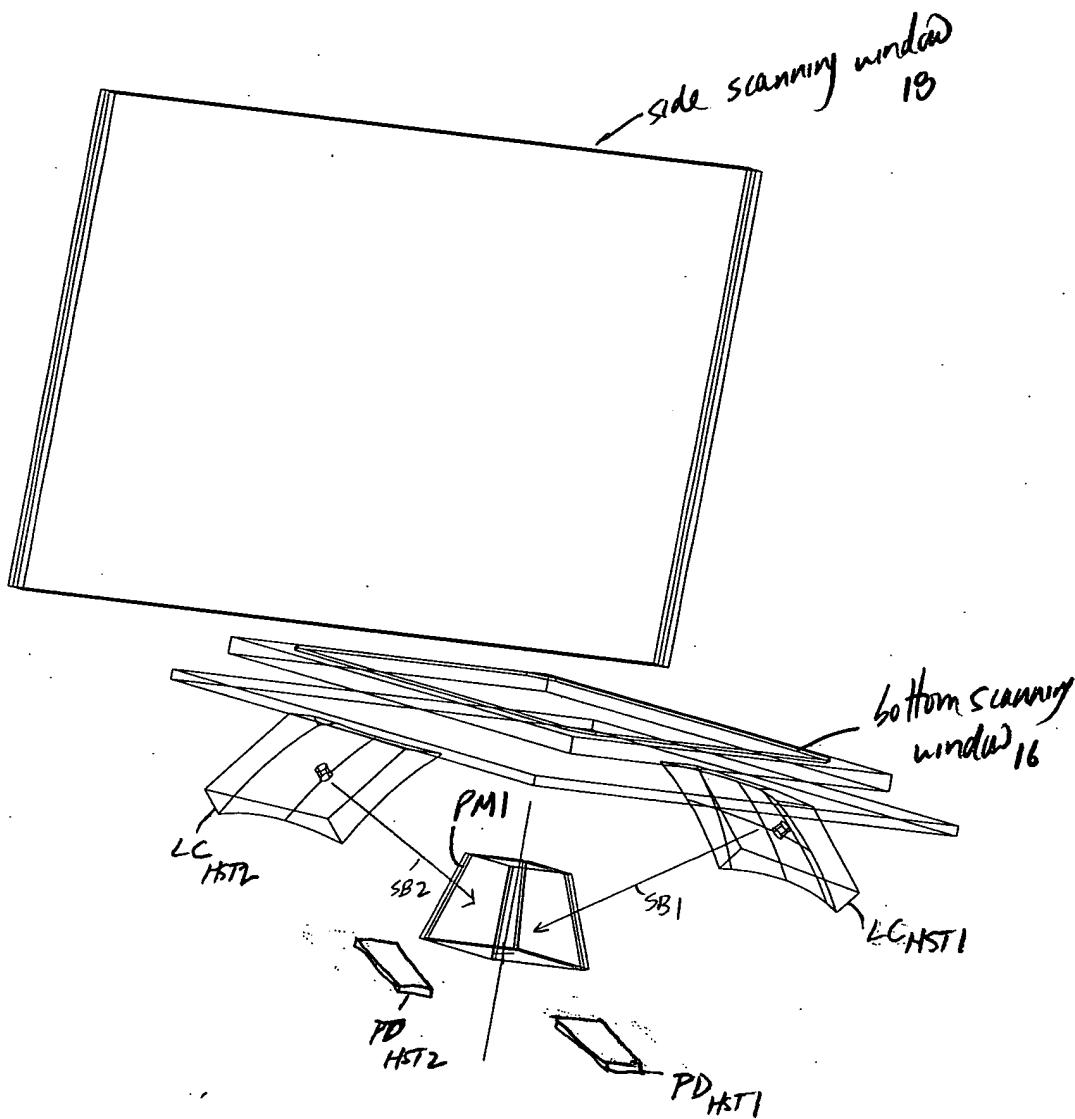


FIG. 2CT

14/08

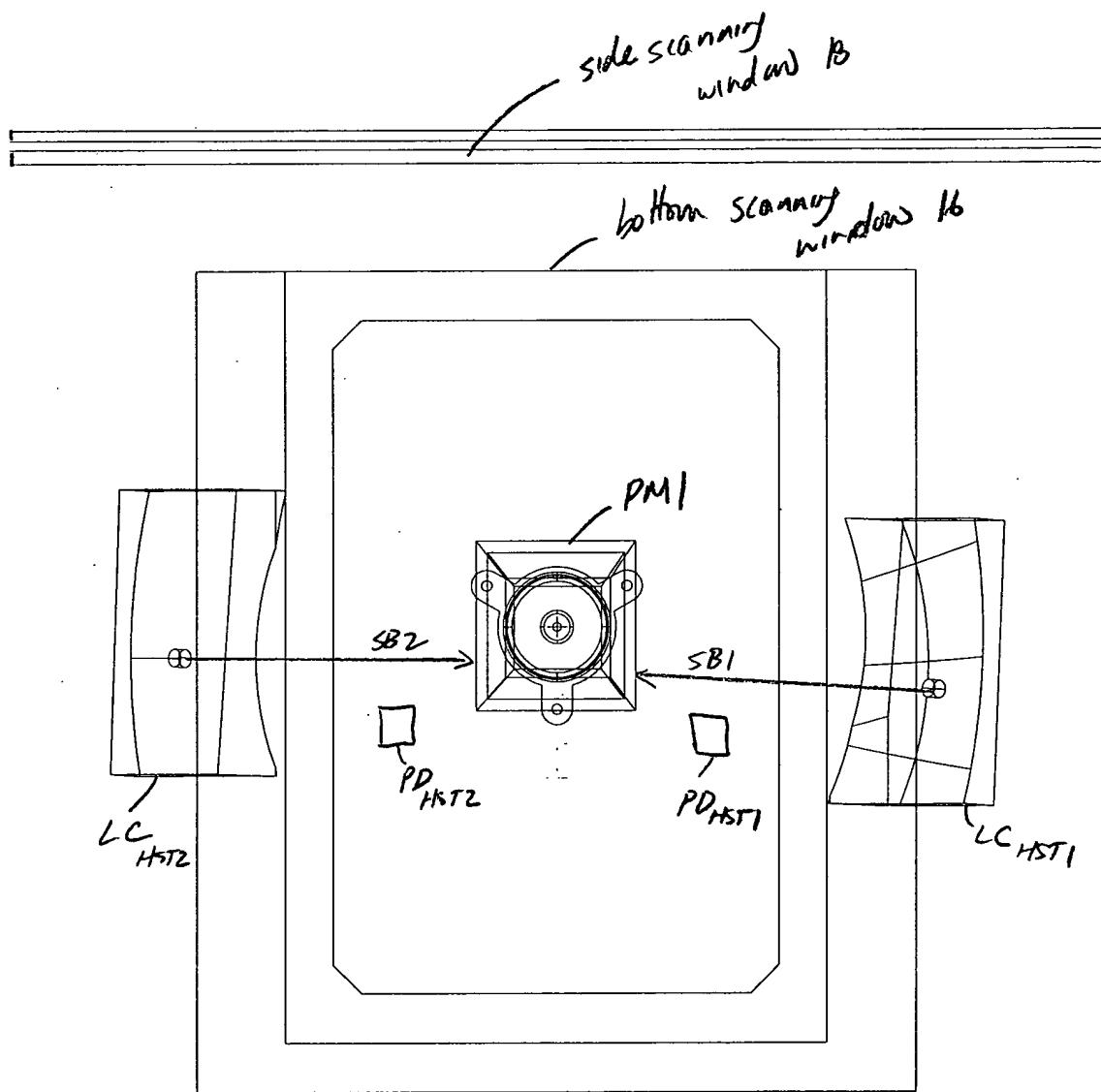


FIG. 2C2

15/88

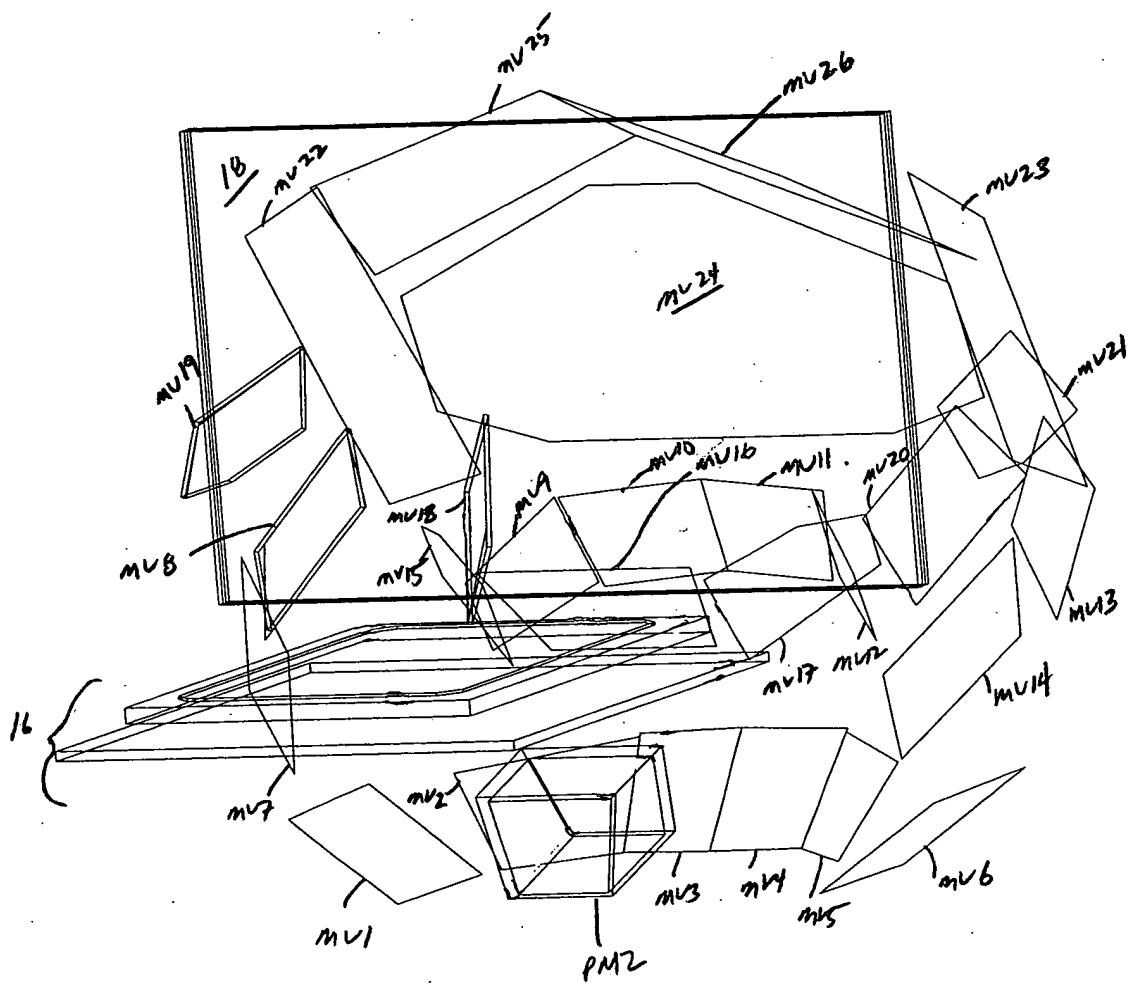
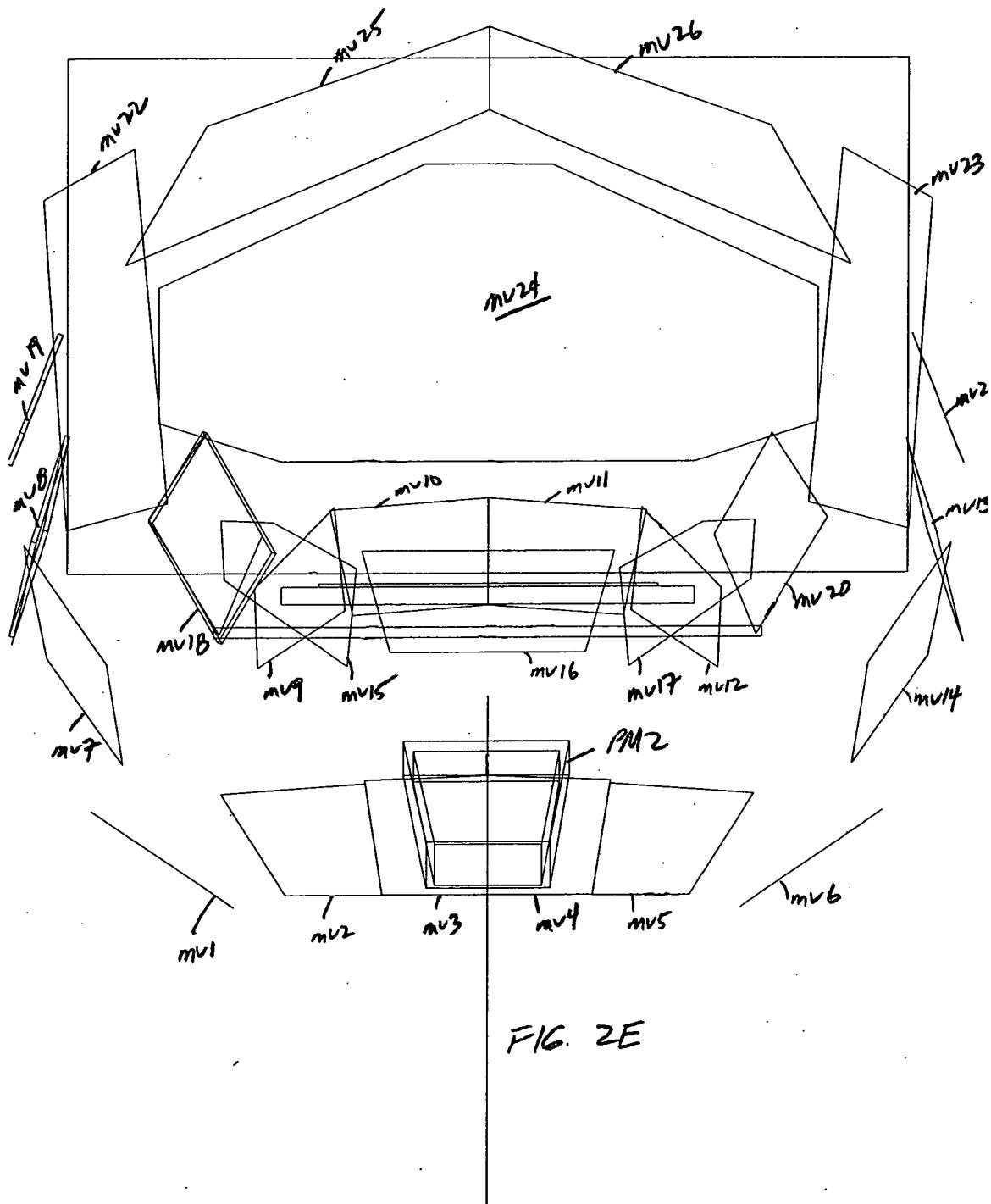


FIG 2D

16/88



17/88

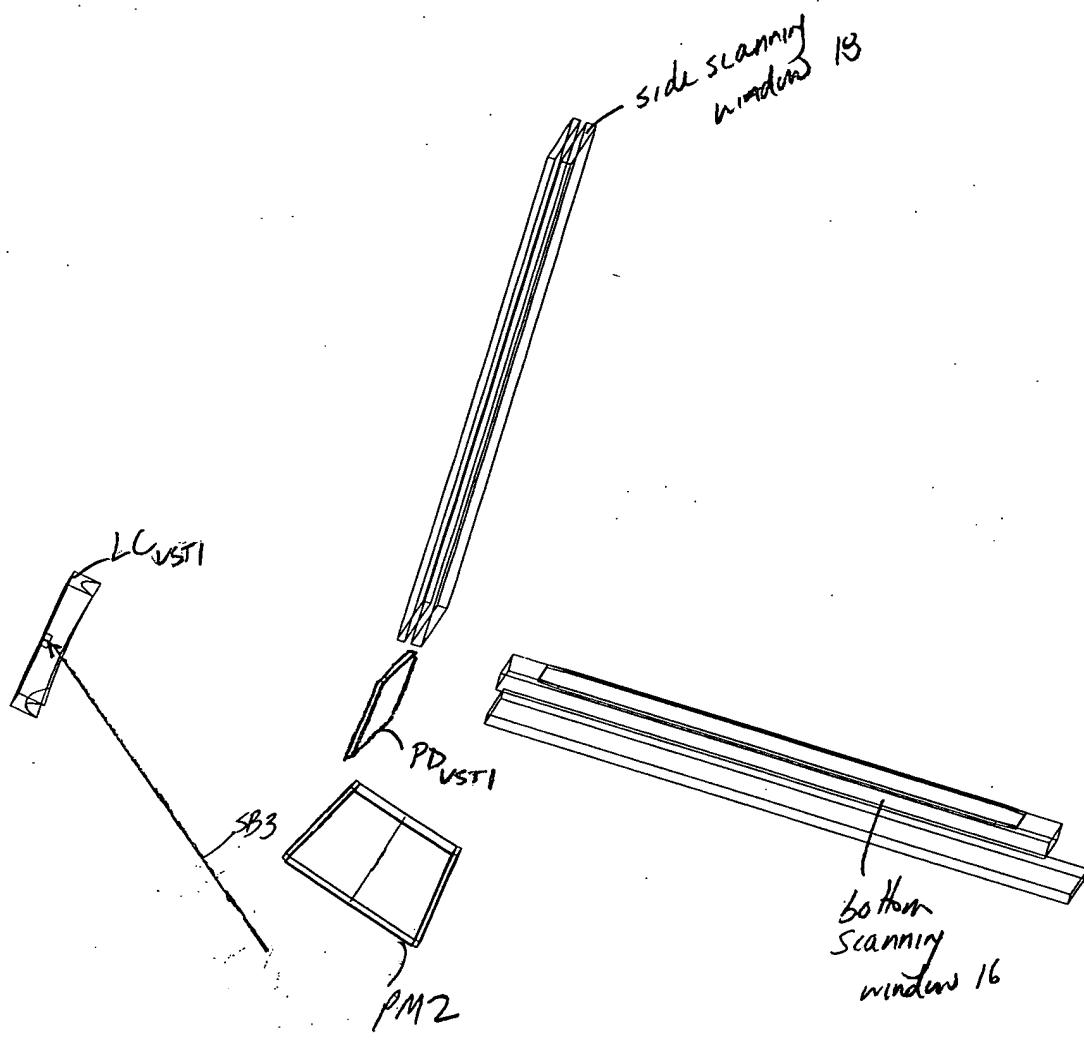
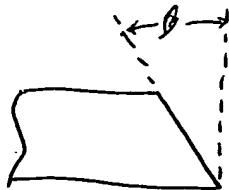


FIG. 2F

10/88



First Polygon PM1

$$\beta_1 = 11.6^\circ$$

$$\beta_2 = 13.3^\circ$$

$$\beta_3 = 14.9^\circ$$

$$\beta_4 = 16.6^\circ$$

Second Polygon PM2

$$\beta_1 = 10^\circ$$

$$\beta_2 = 12^\circ$$

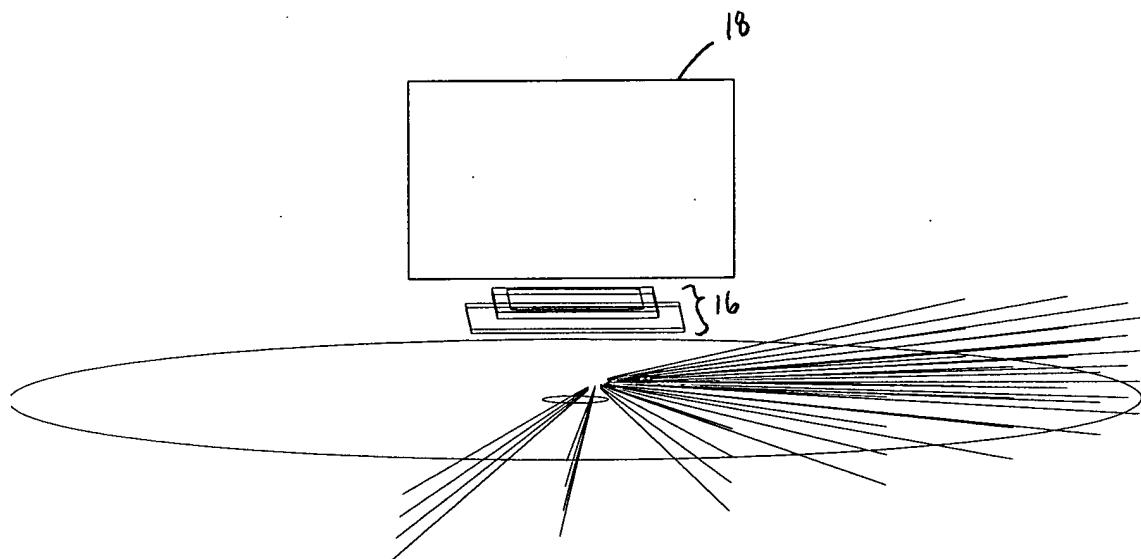
$$\beta_3 = -10^\circ$$

$$\beta_4 = -12^\circ$$

FIG. 2G1

19/08

FIG. 262



20/08

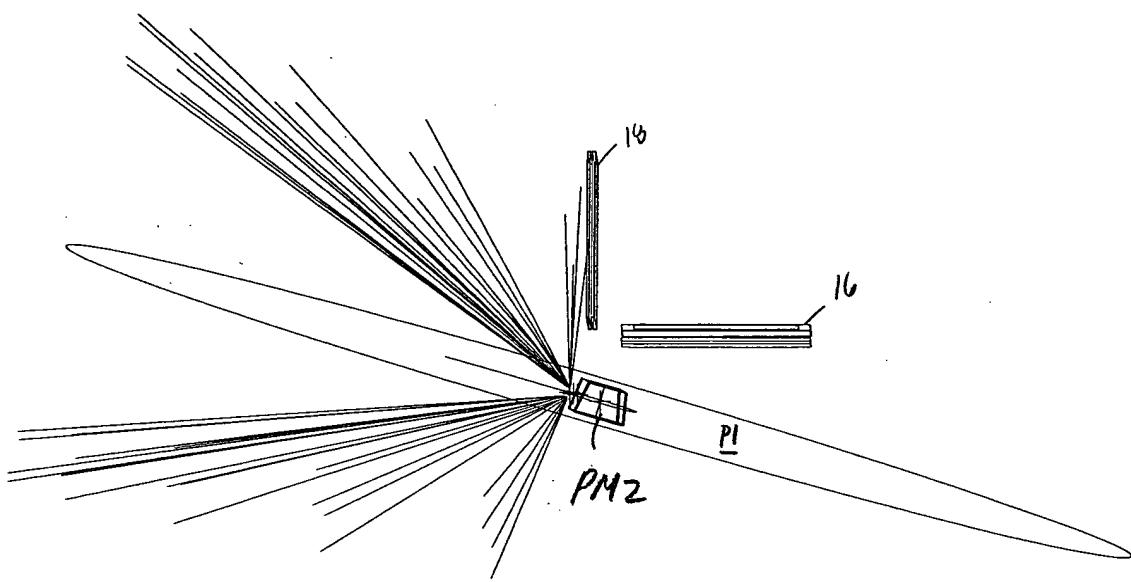


FIG. 263

21/88

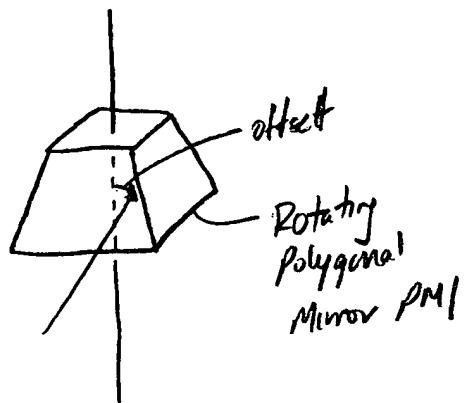
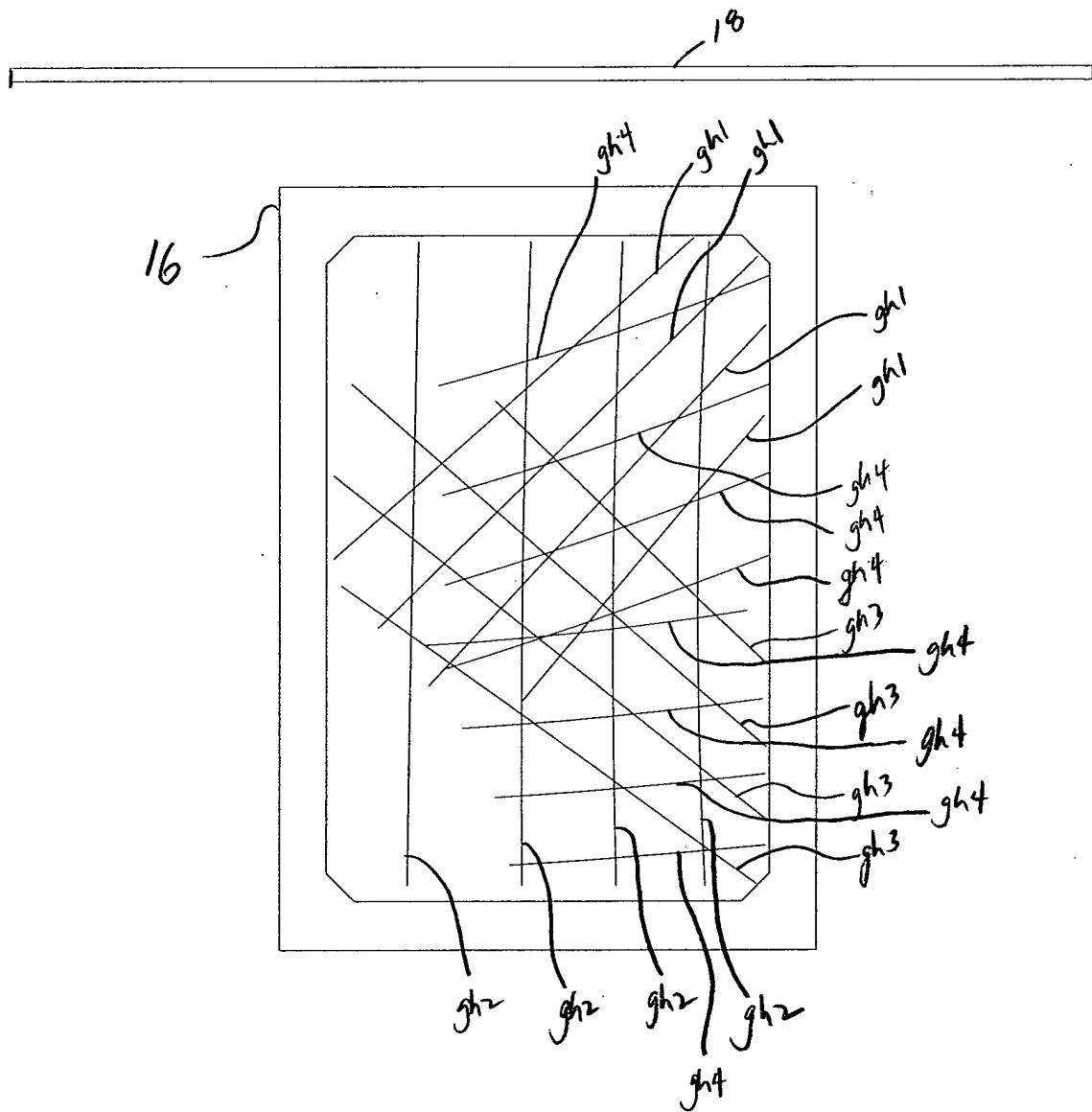


FIG. 2H

22/08

FIG. 3A



23/88

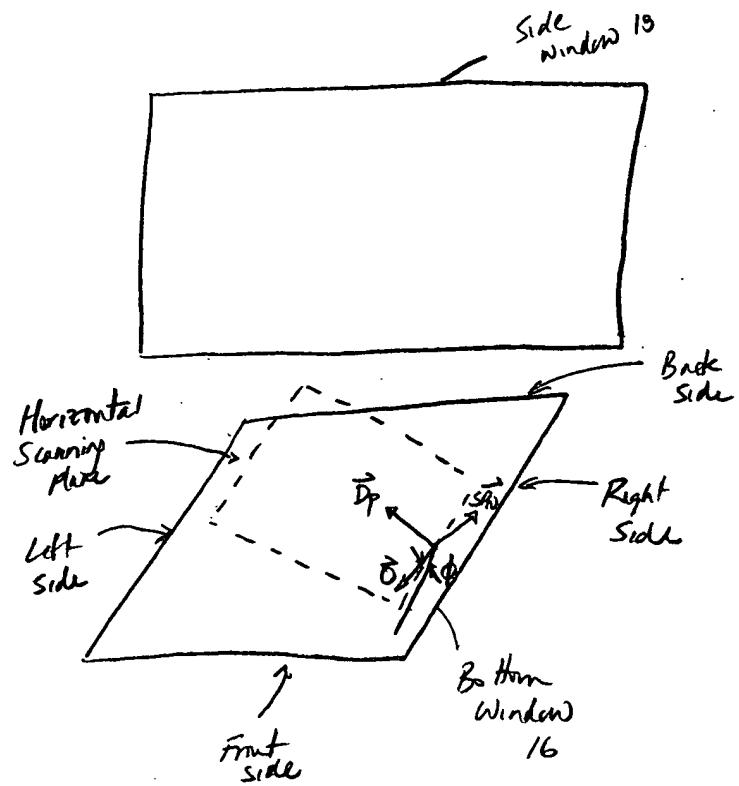


Fig. 381

24/08

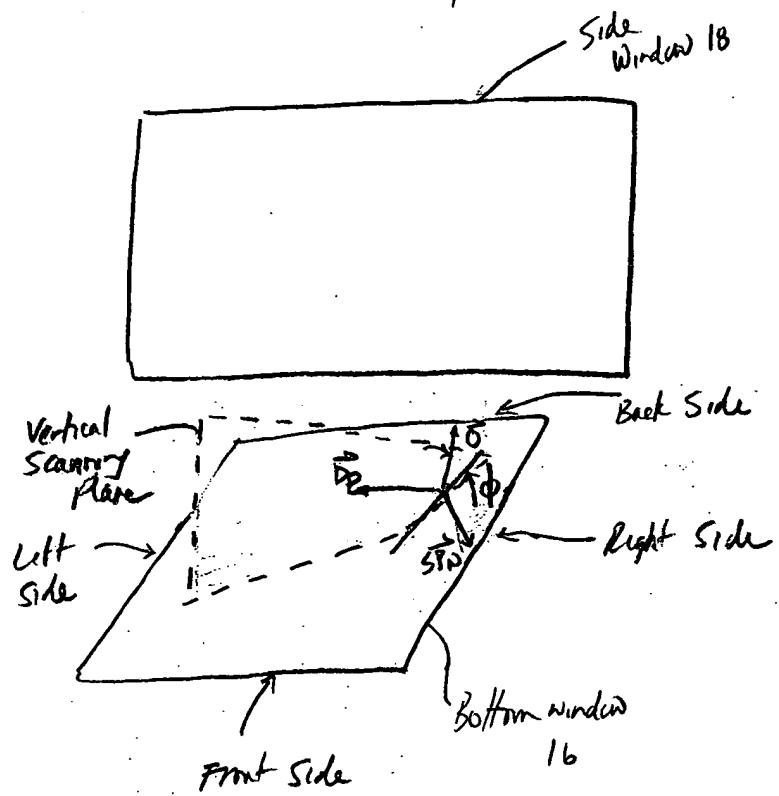
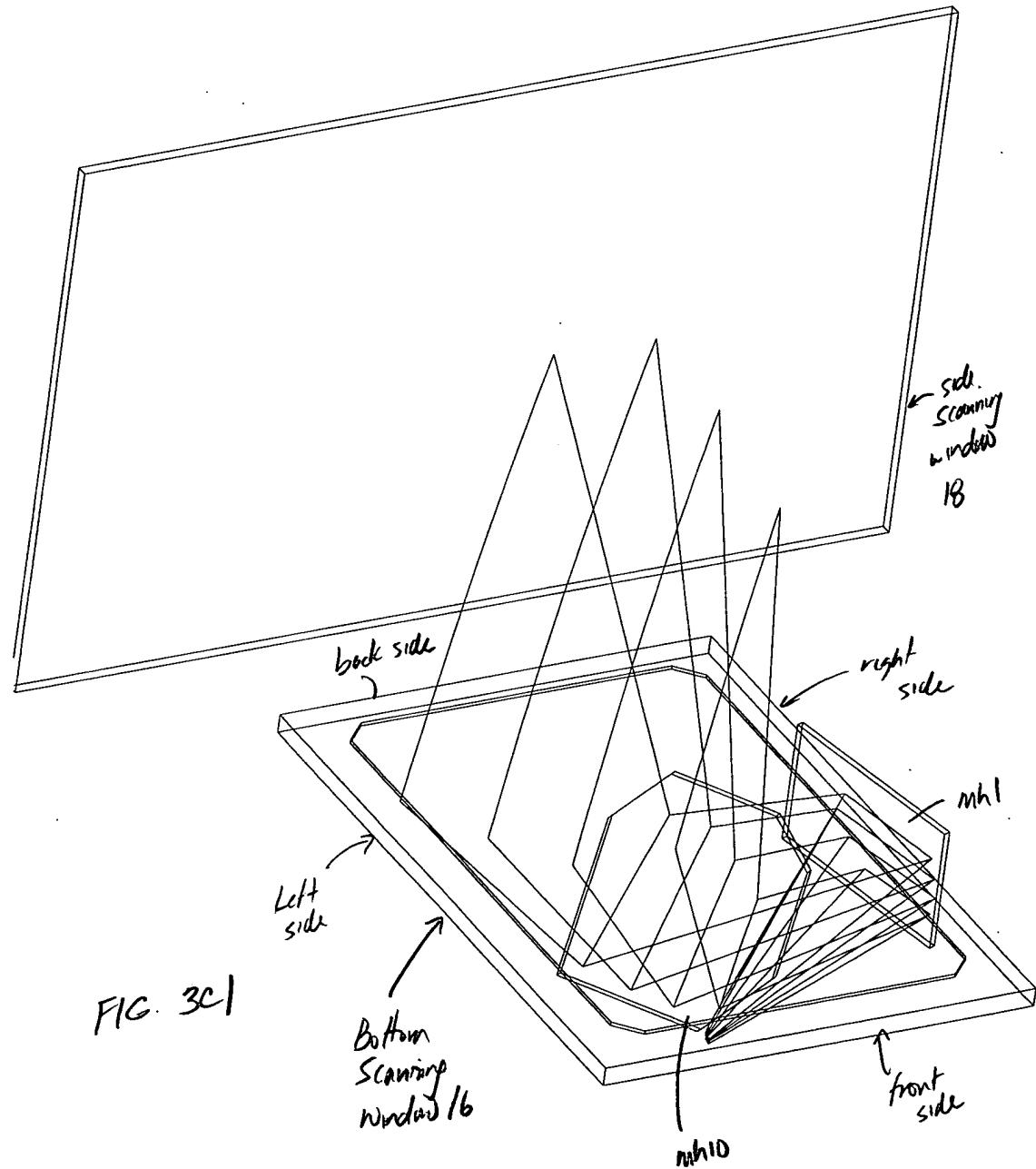


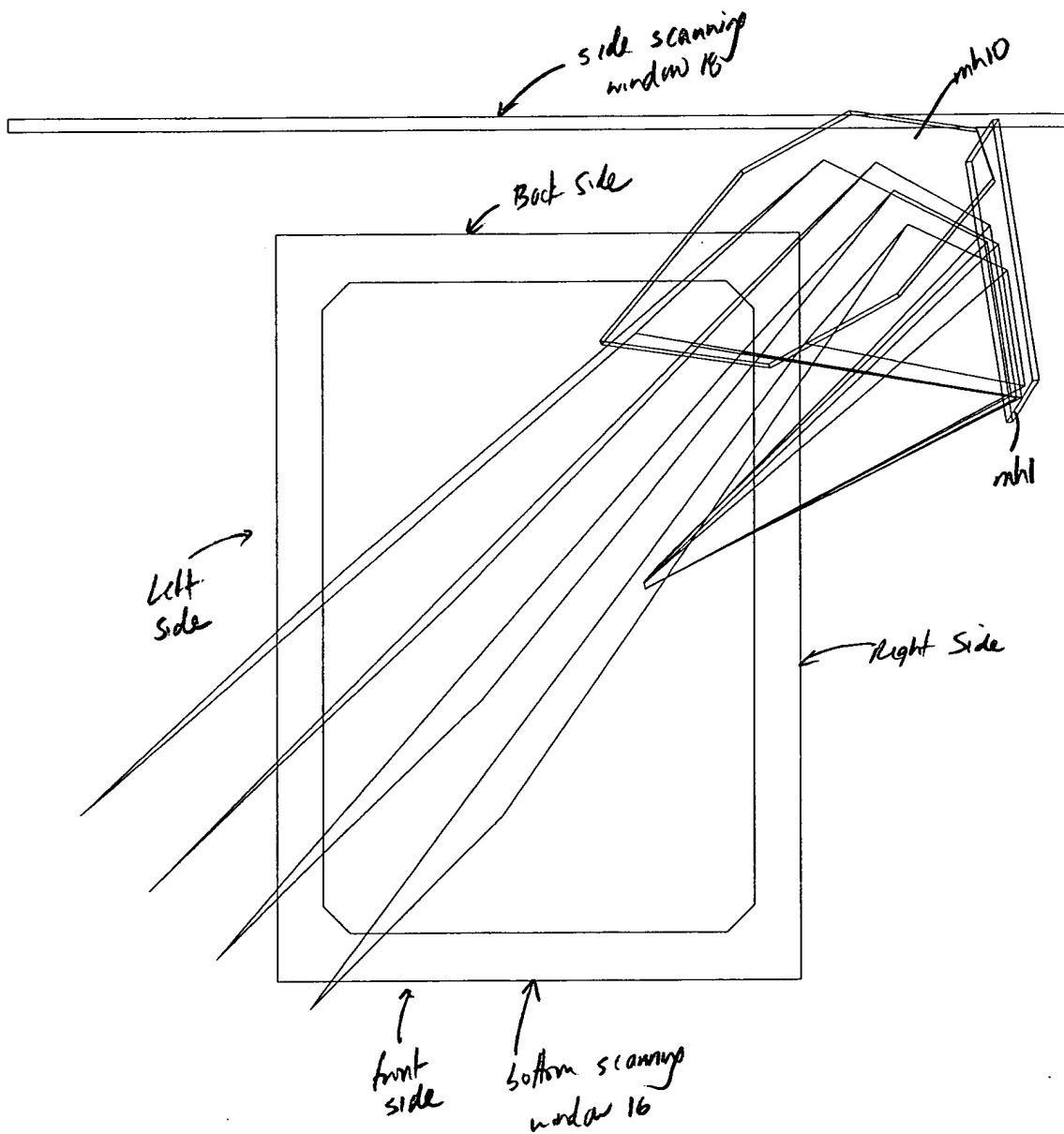
FIG. 3B2

25/88

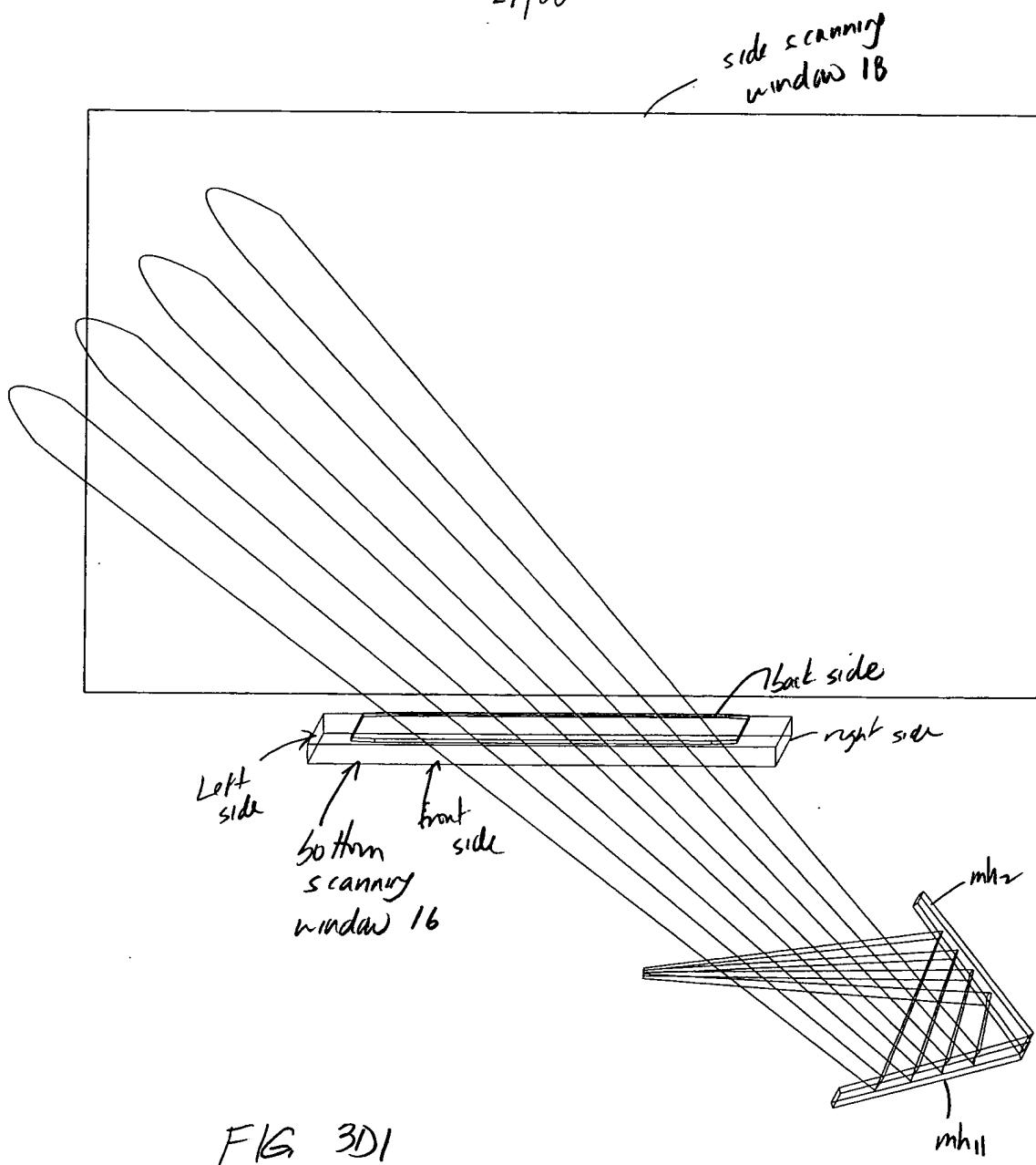


26/88

FIG. 3C2



27/88



28/88

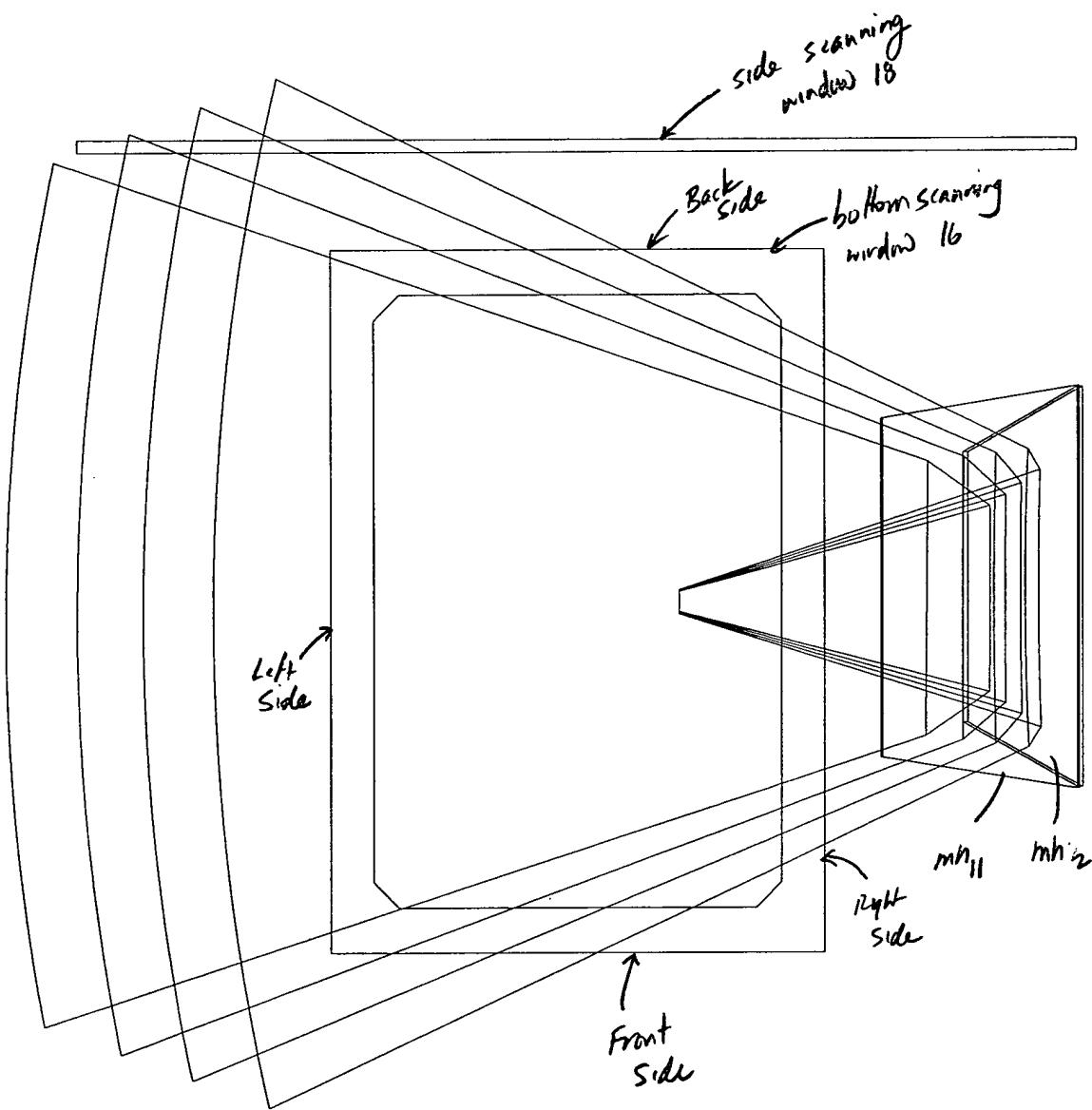


FIG. 3D2

29/88

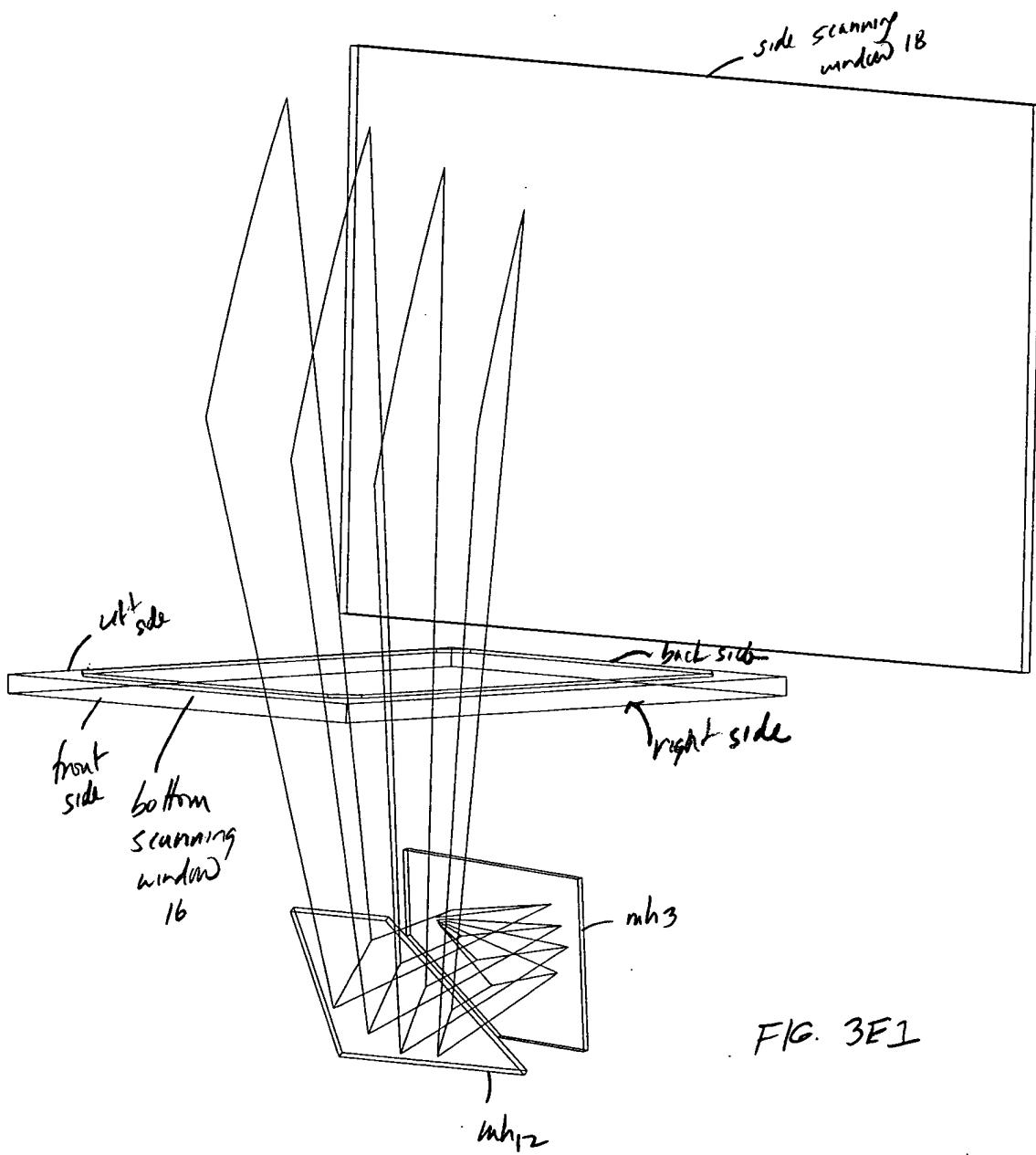


FIG. 3E1

30/08

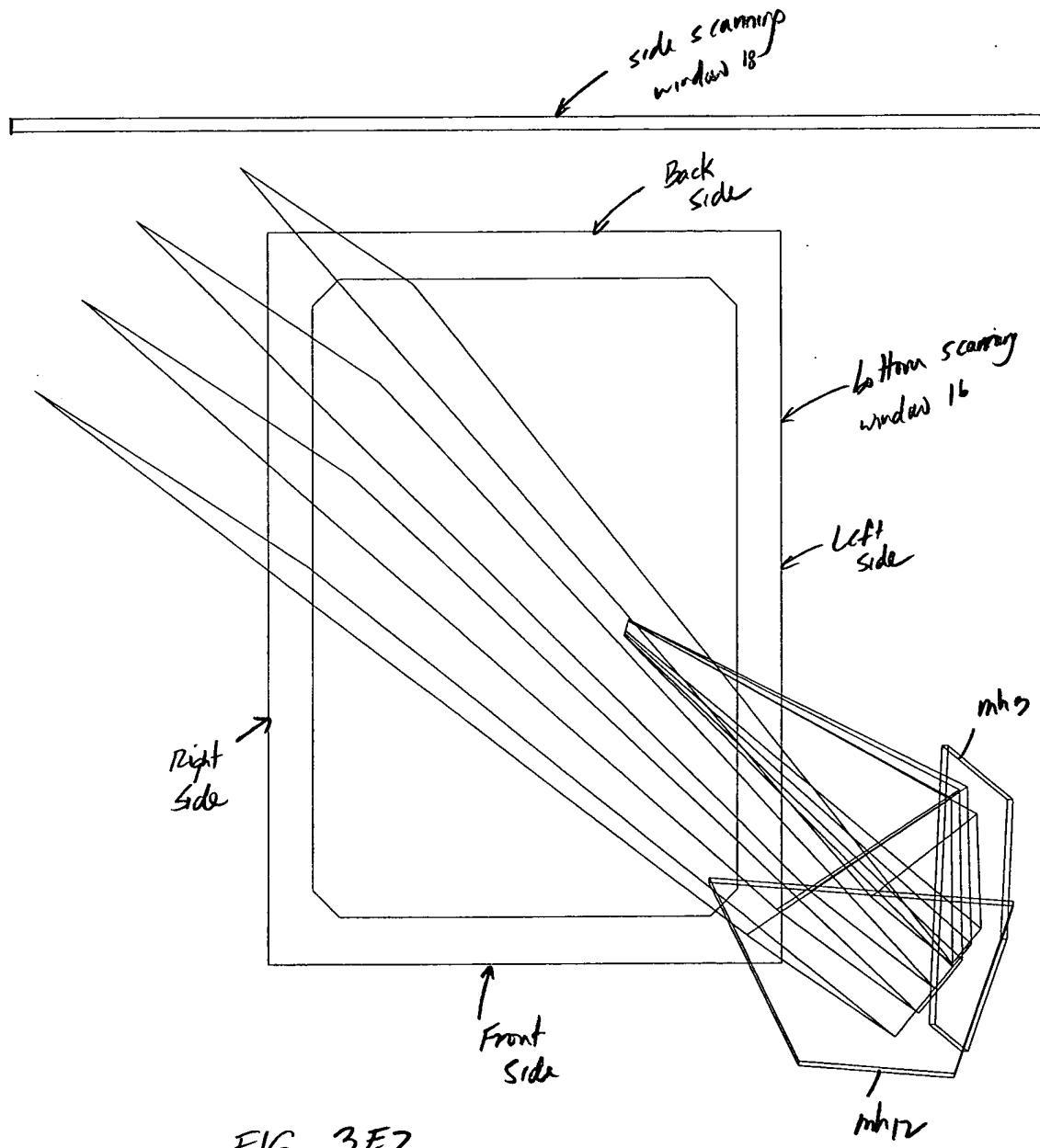


FIG. 3E2

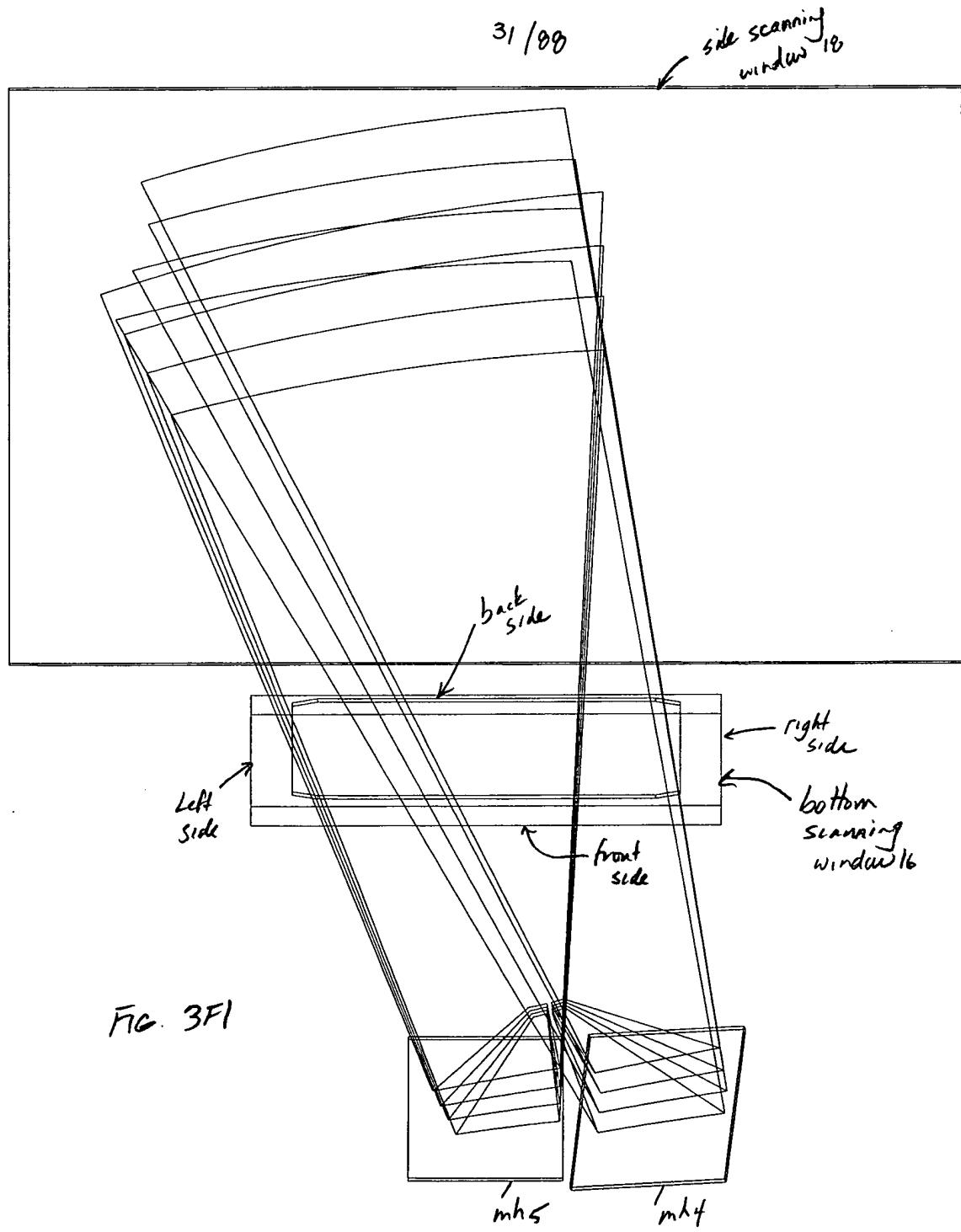


FIG. 3F1

32/88

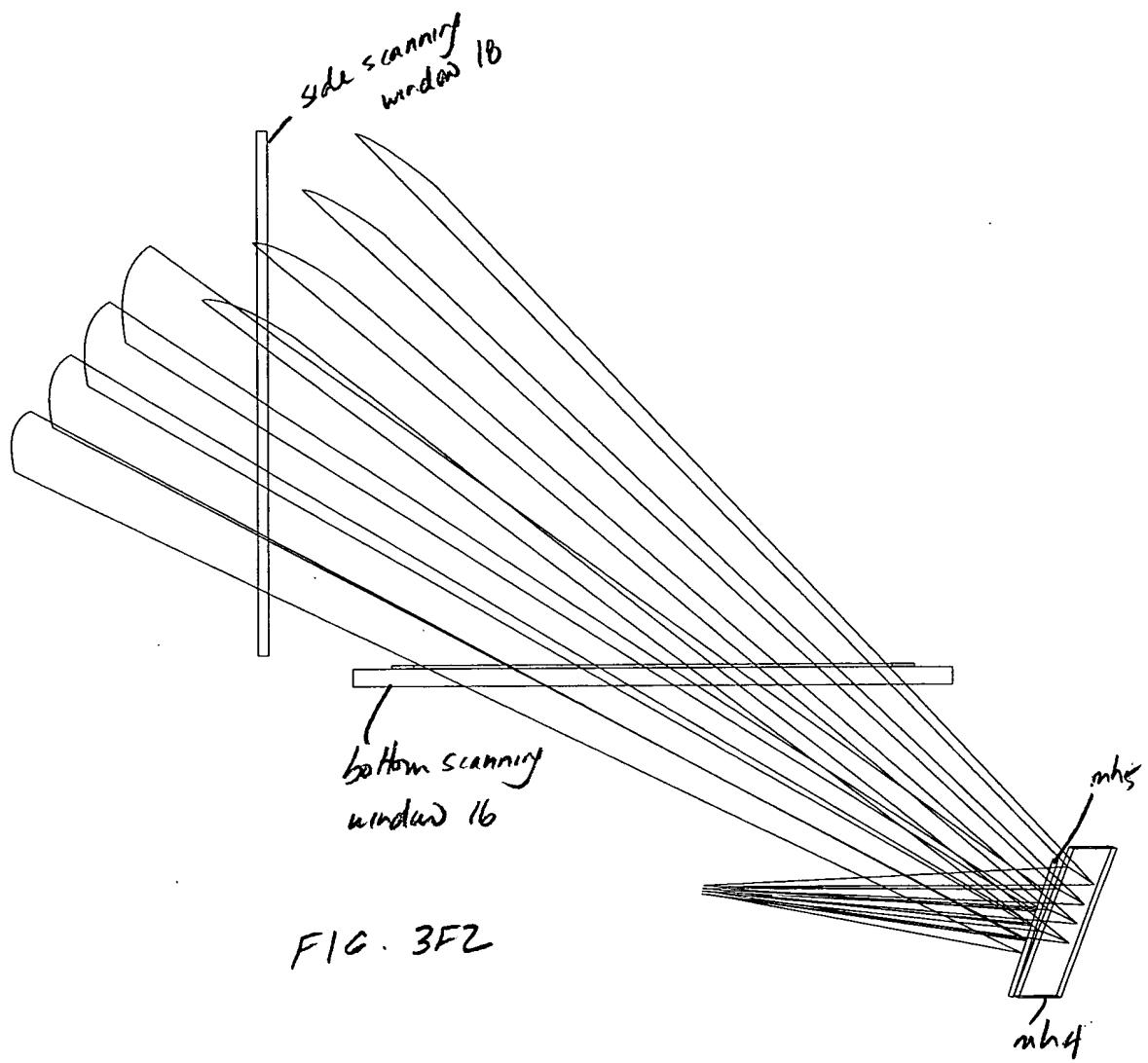
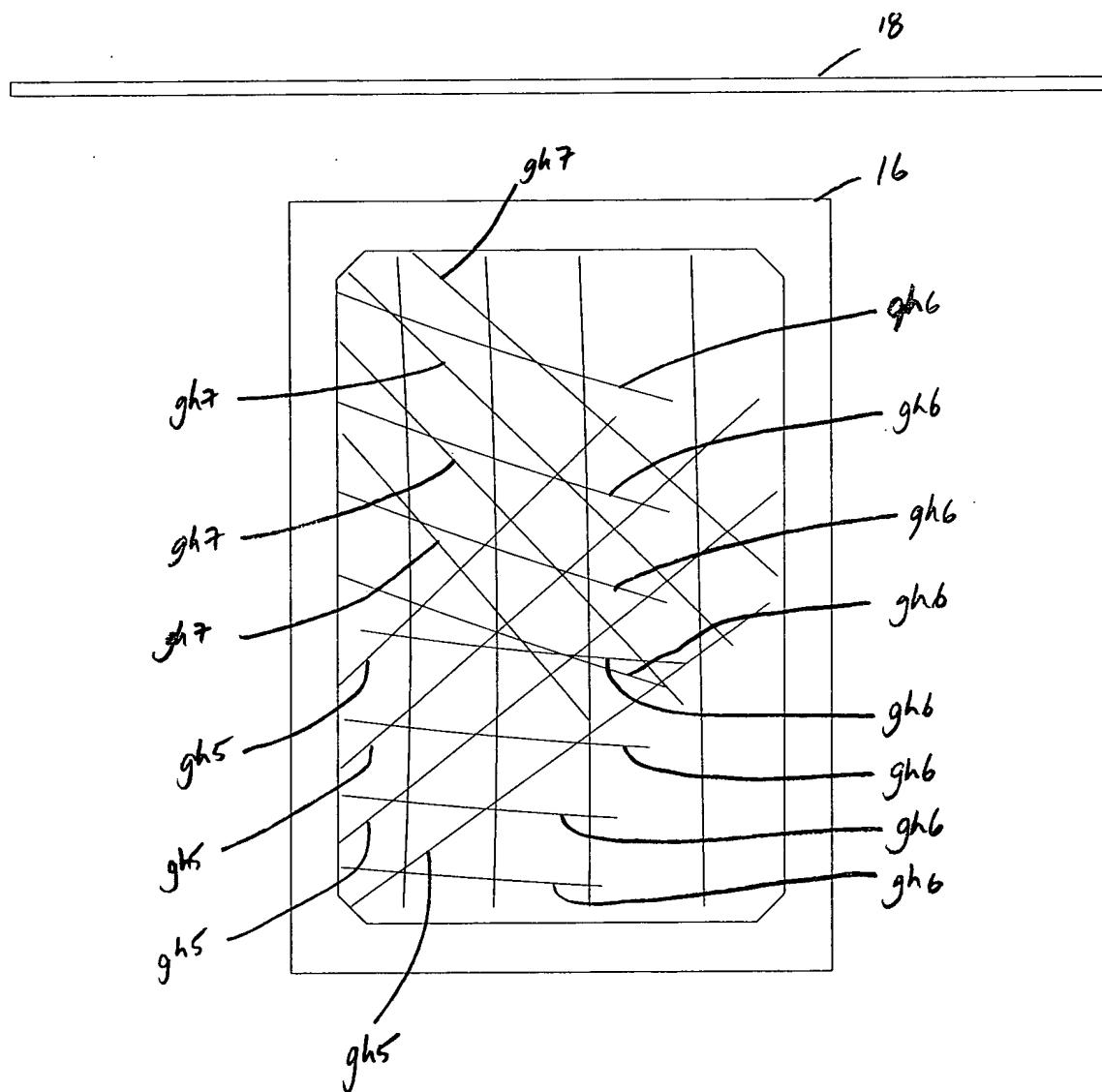
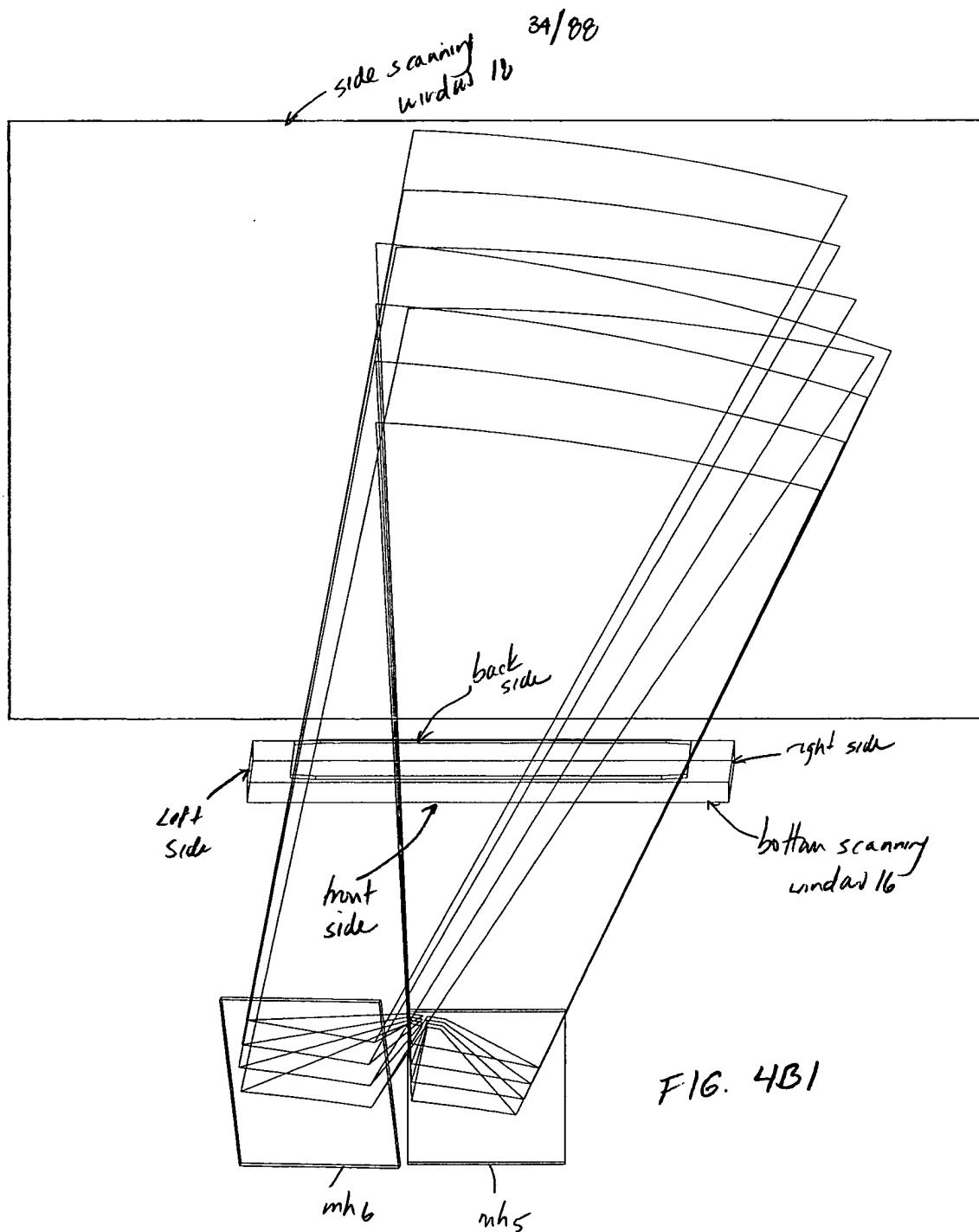


FIG. 3E2

33/88

FIG. 4A





35/88

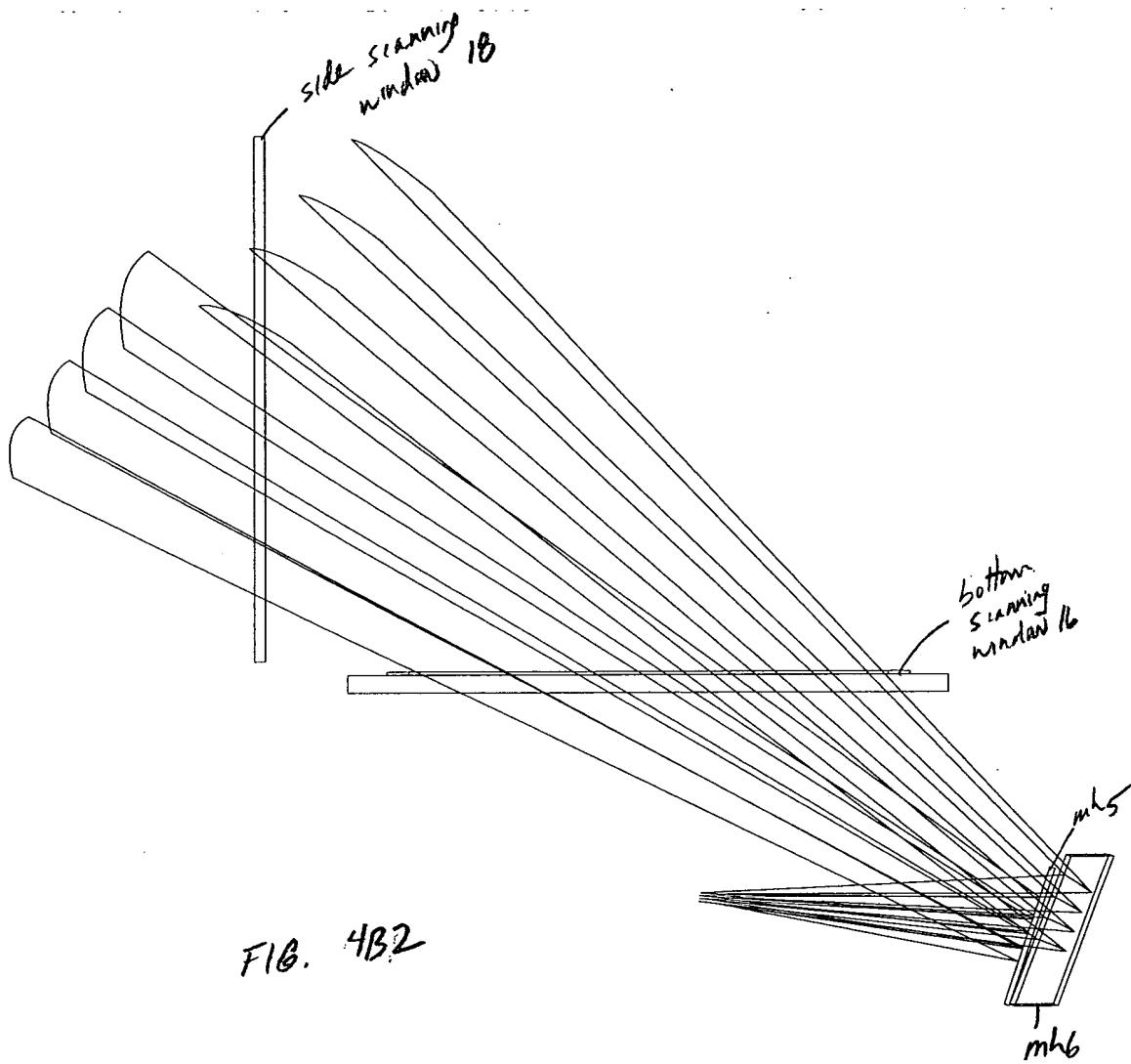
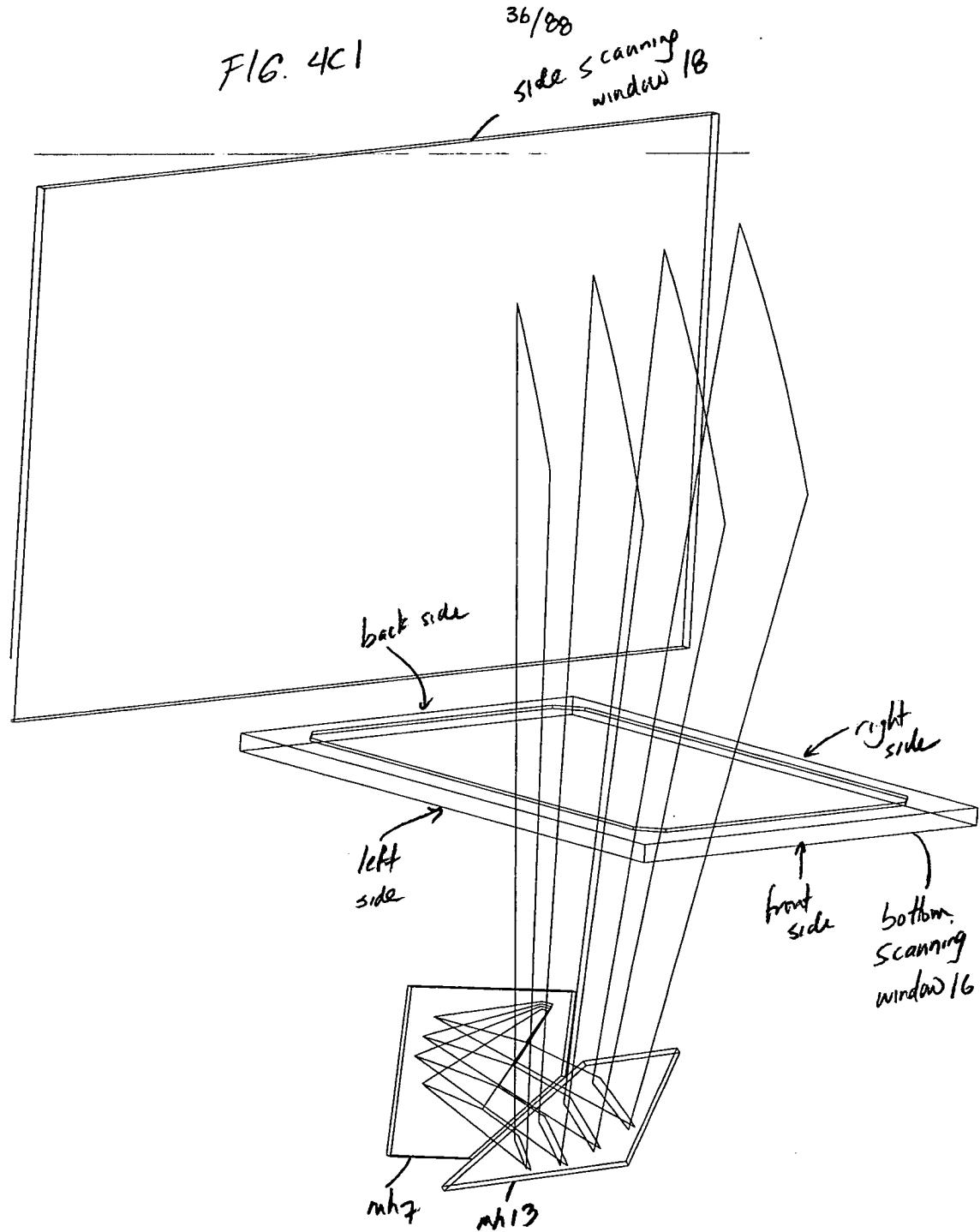
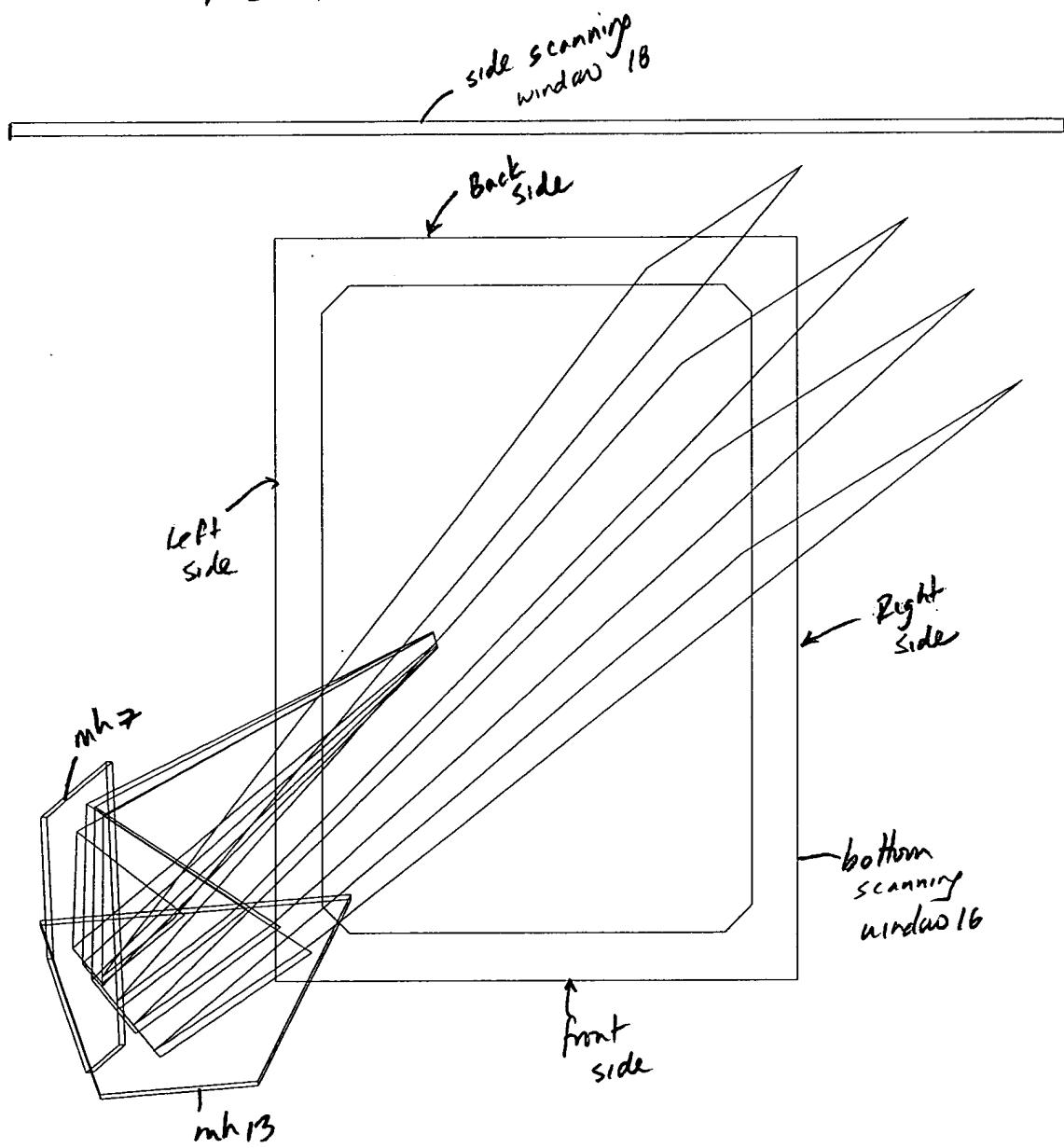


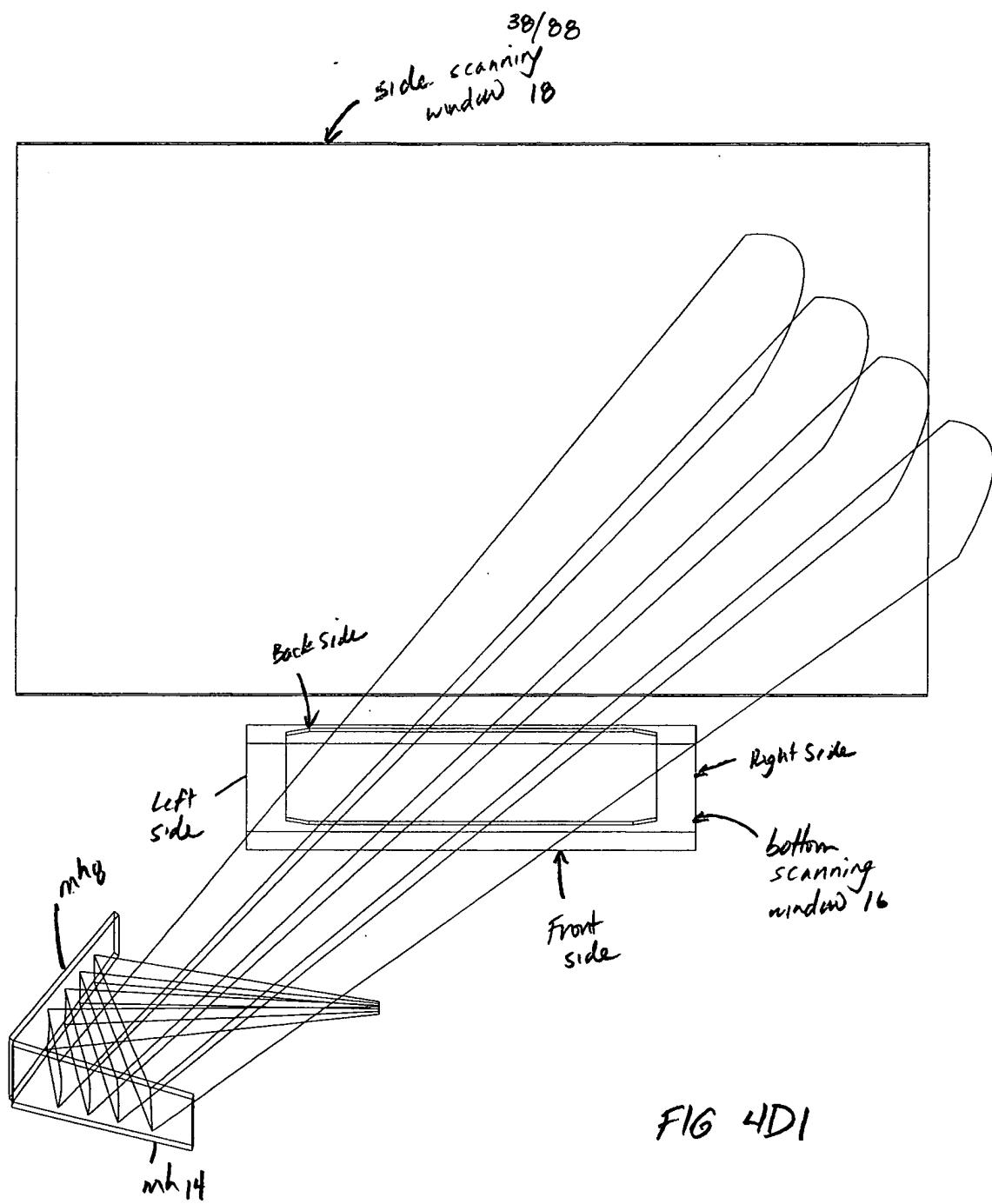
FIG. 4B2



37/88

FIG. 4C2





39/88

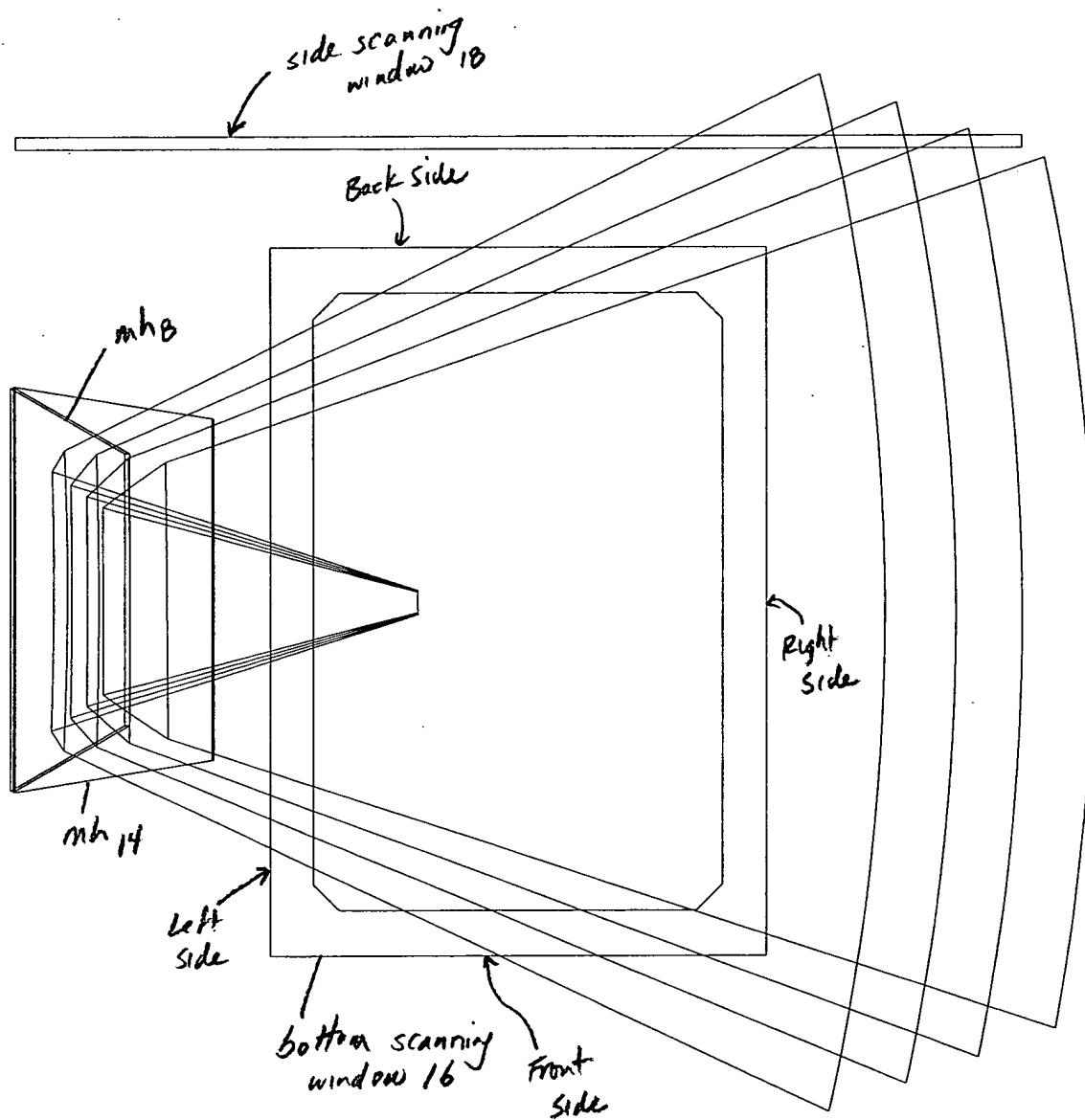


FIG. 4D2

40/88

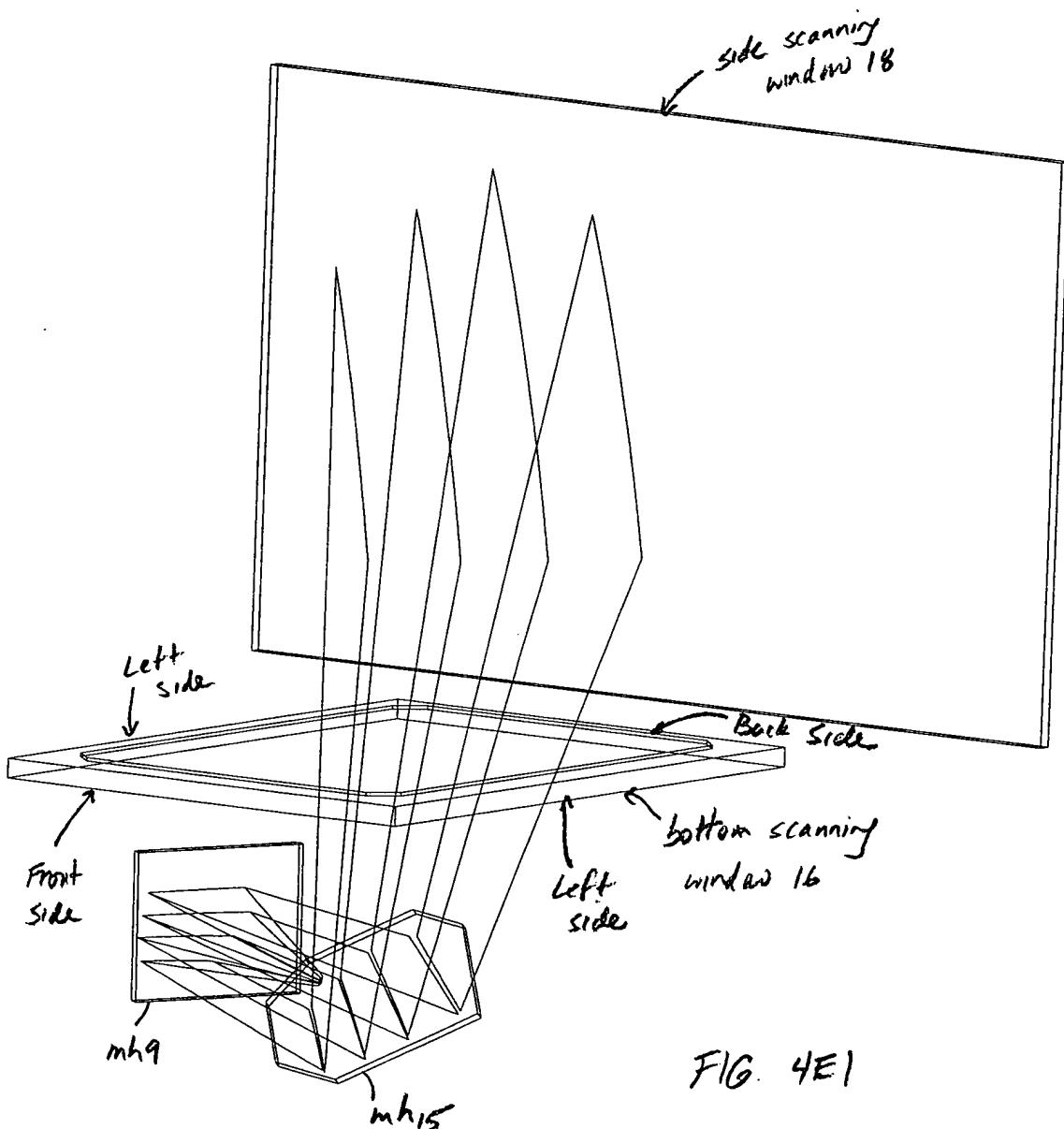


FIG. 4E1

41/88

FIG. 4E2

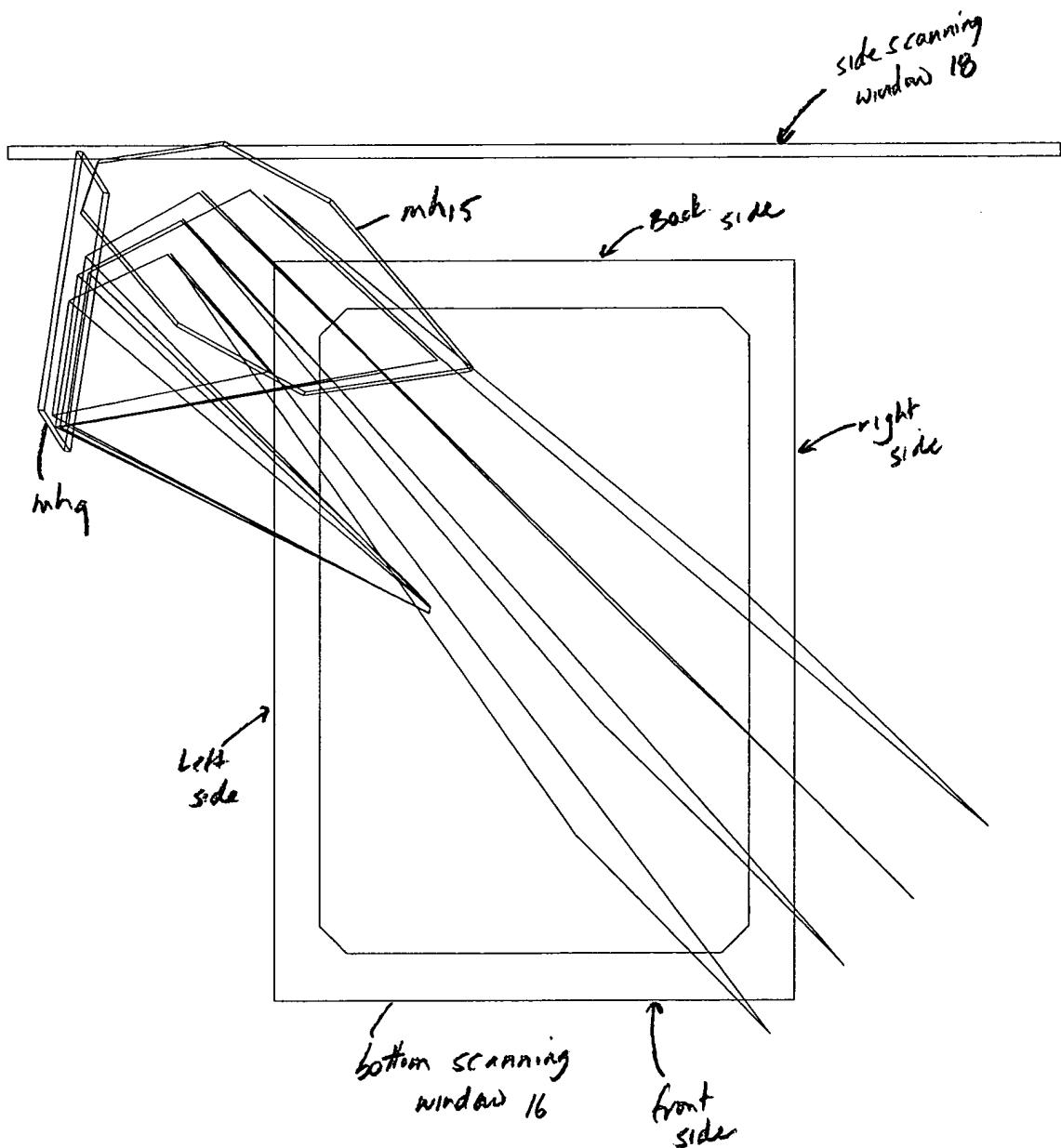
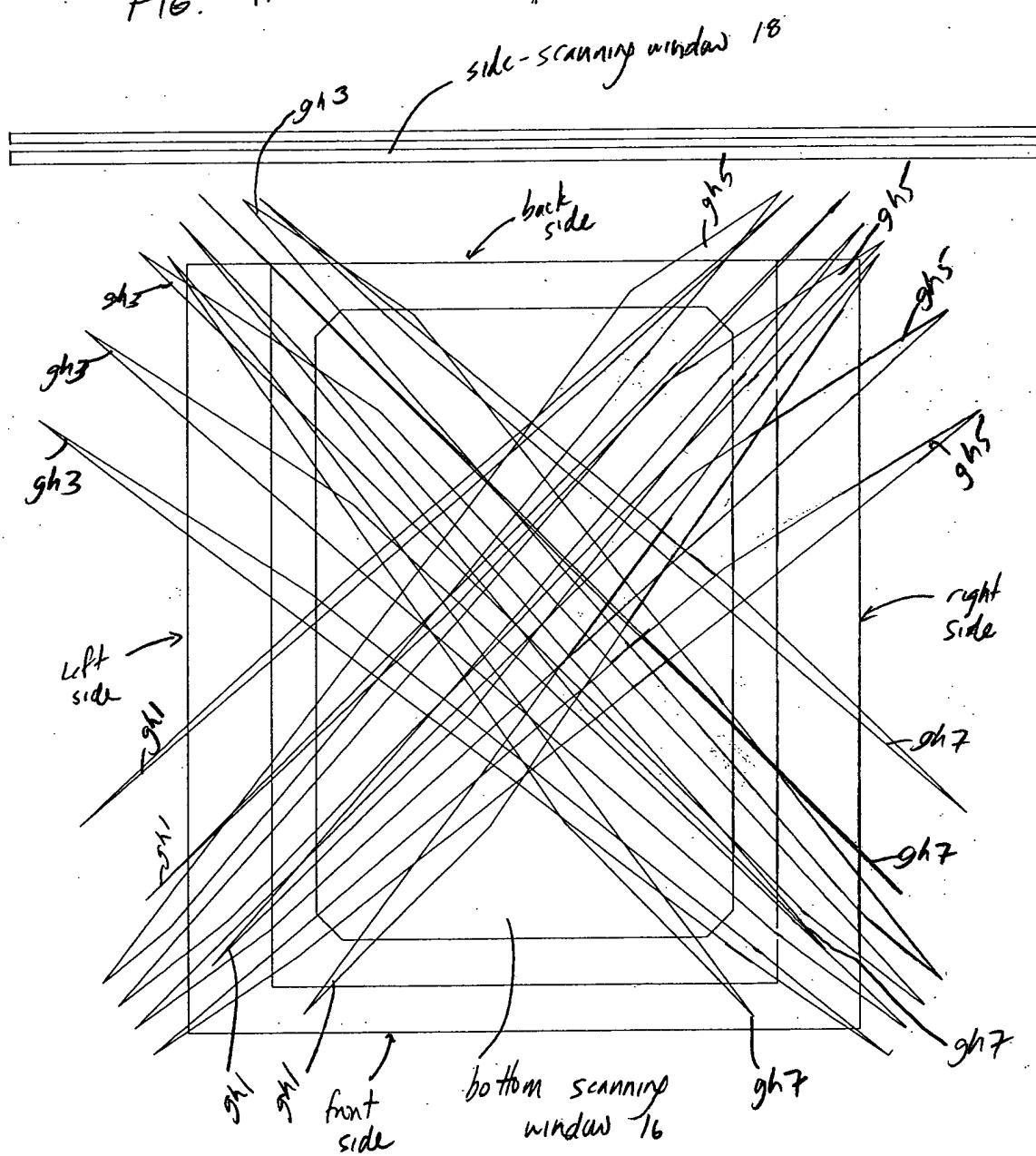


FIG. 4F

42/08



13/88

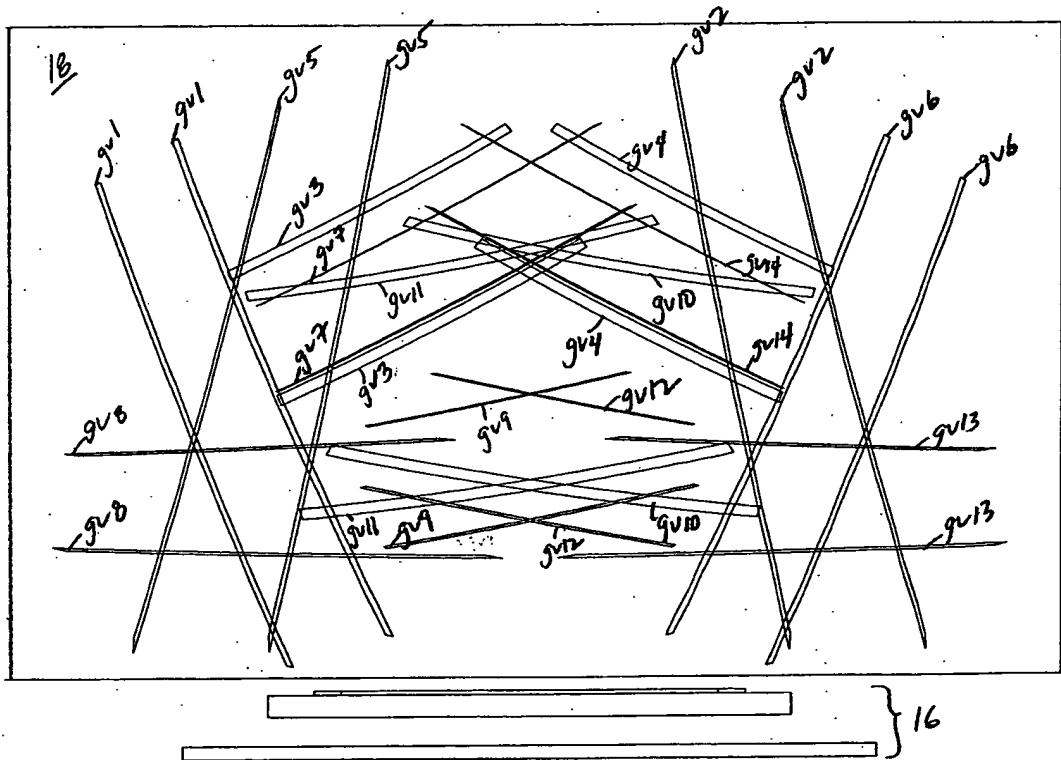


FIG. 5A

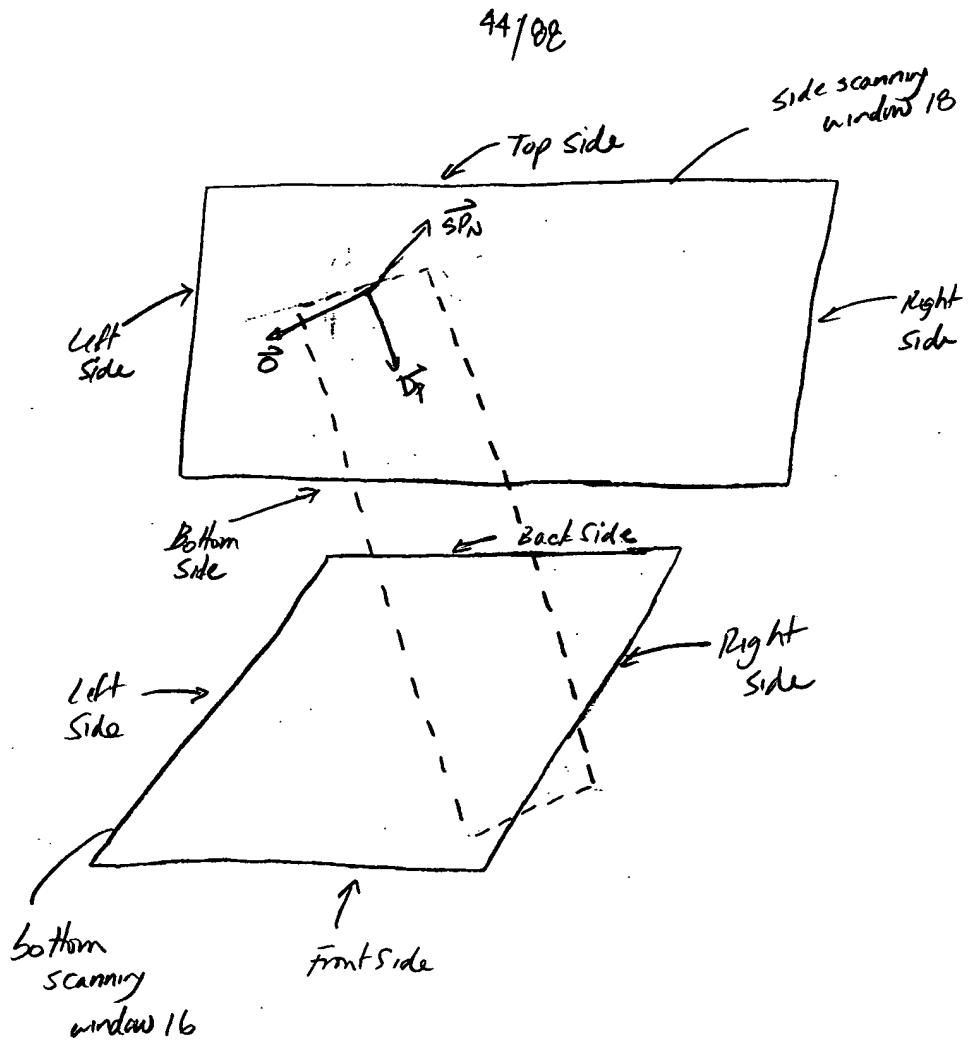


FIG. 5B1

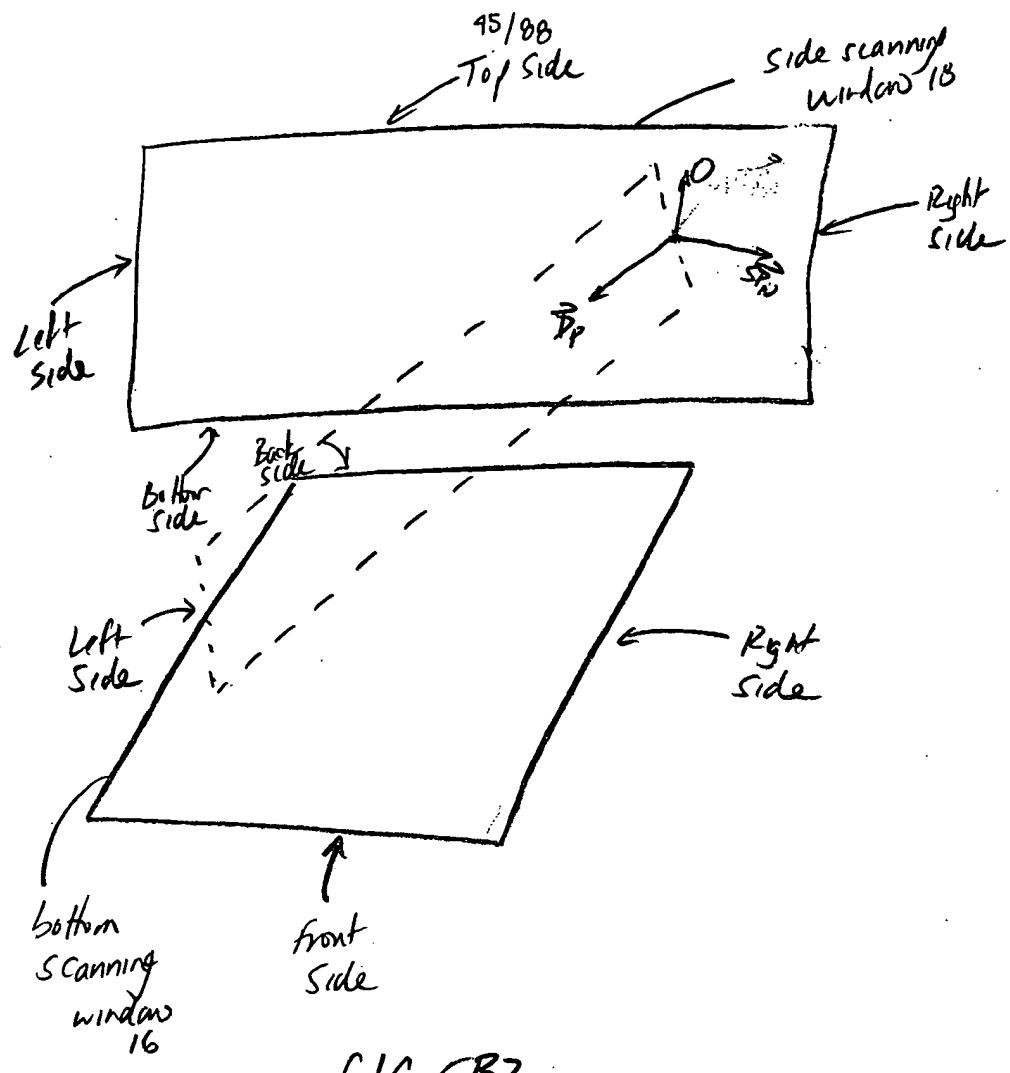


FIG. SB2

46/88

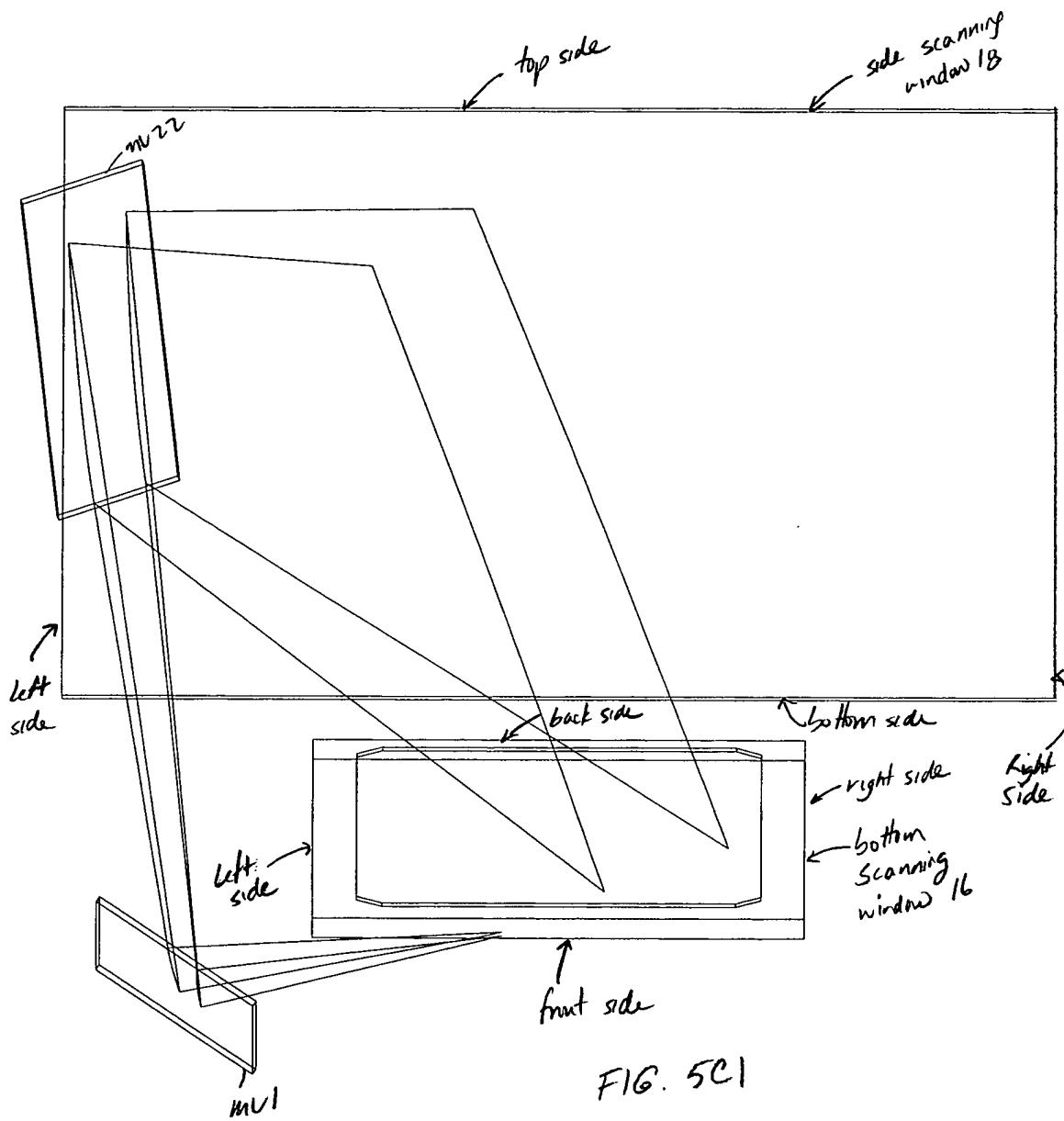
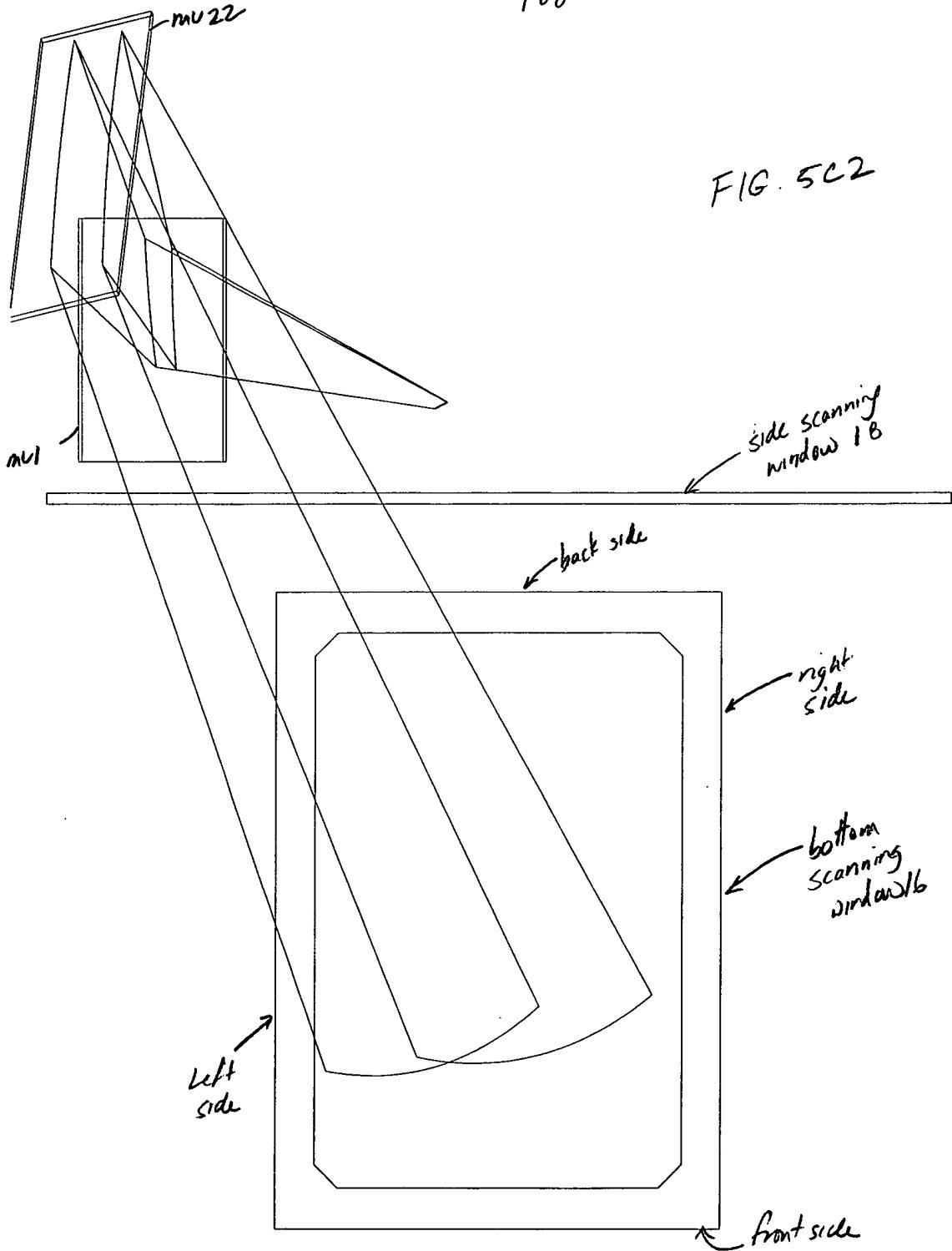


FIG. 5C1

47/88

FIG. 5C2



10/88

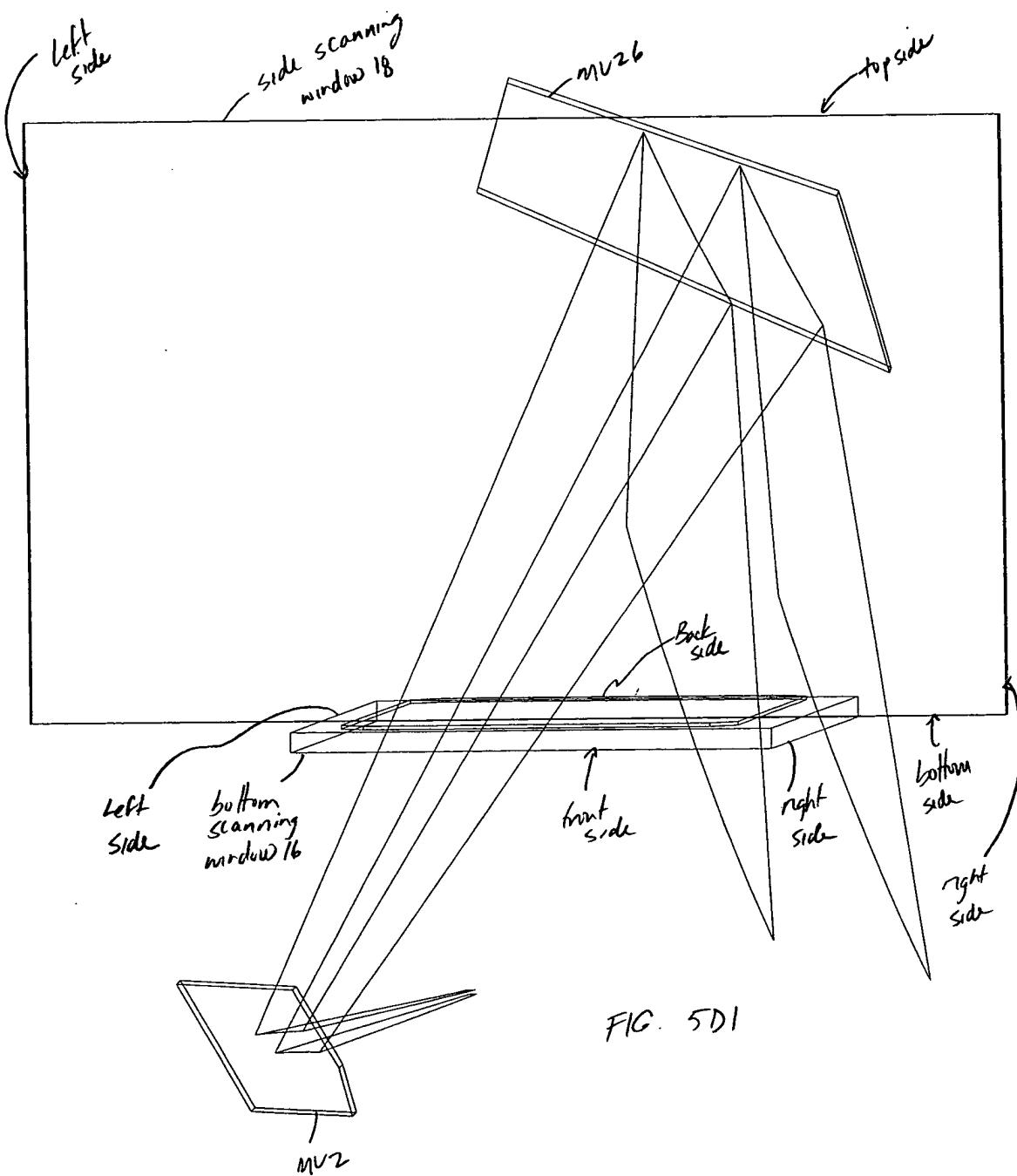
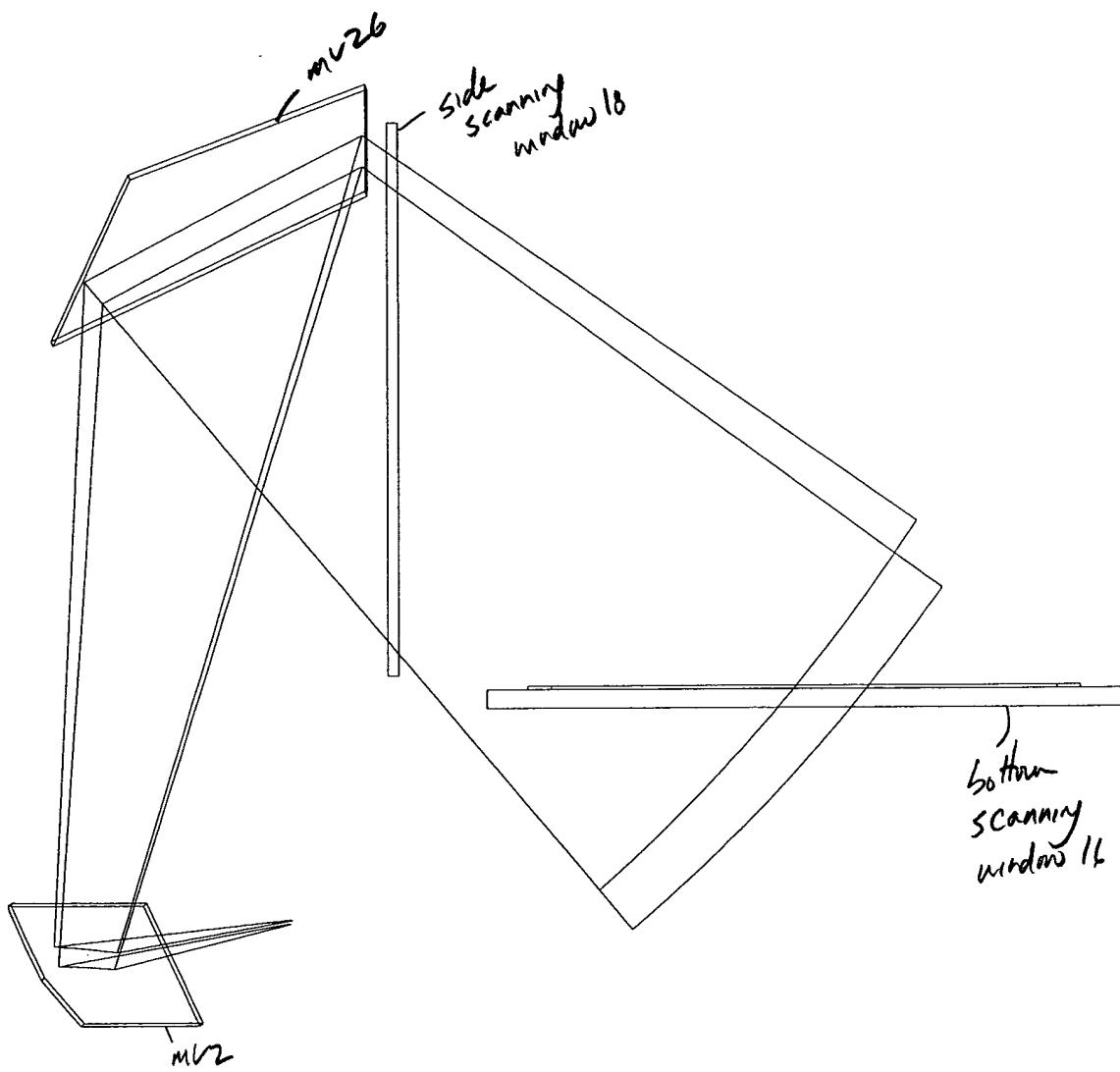


FIG. 5D1

49/00

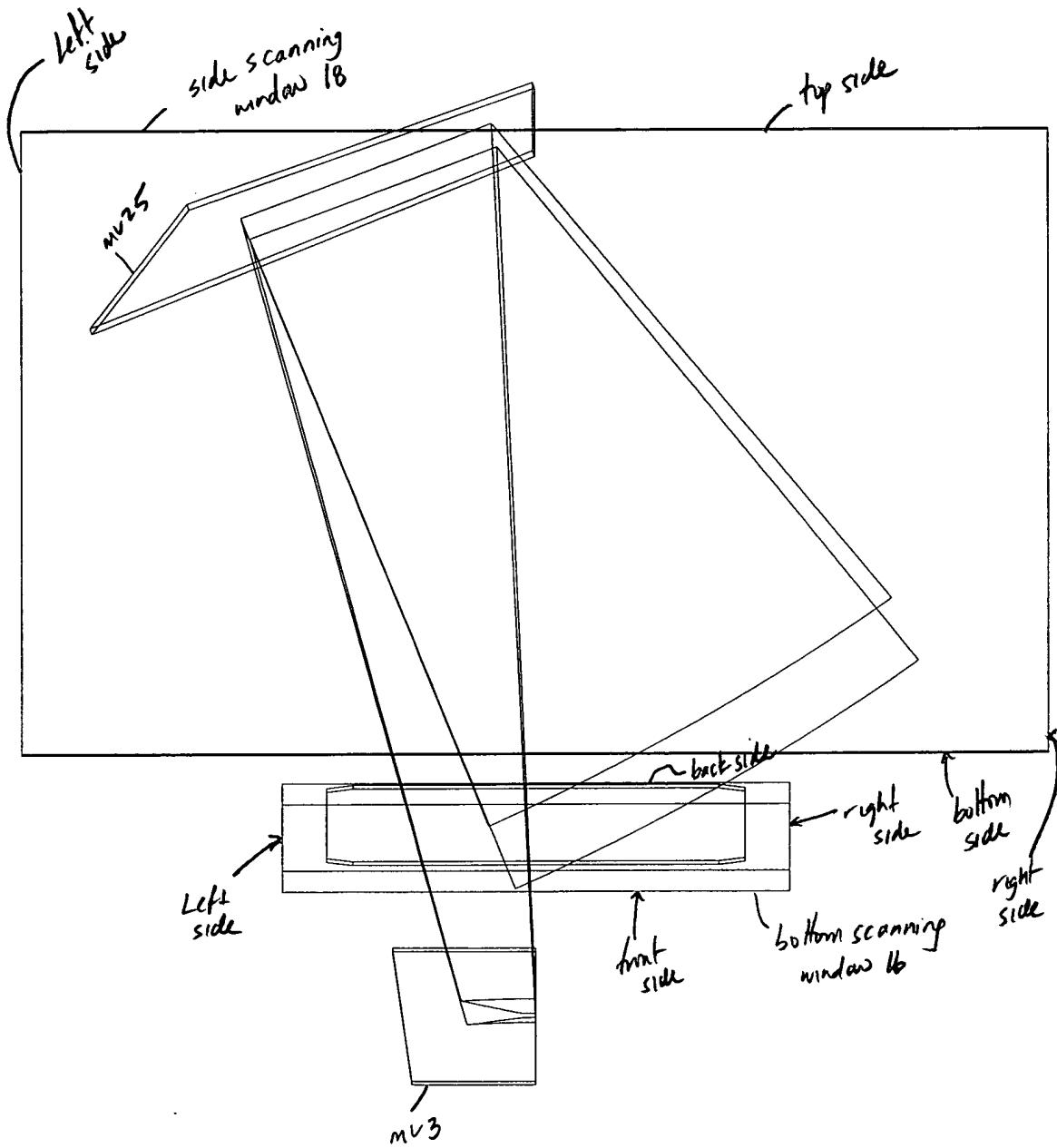
FIG. SD2

mv26
mv2
side scanning window 18
bottom scanning window 16



50/98

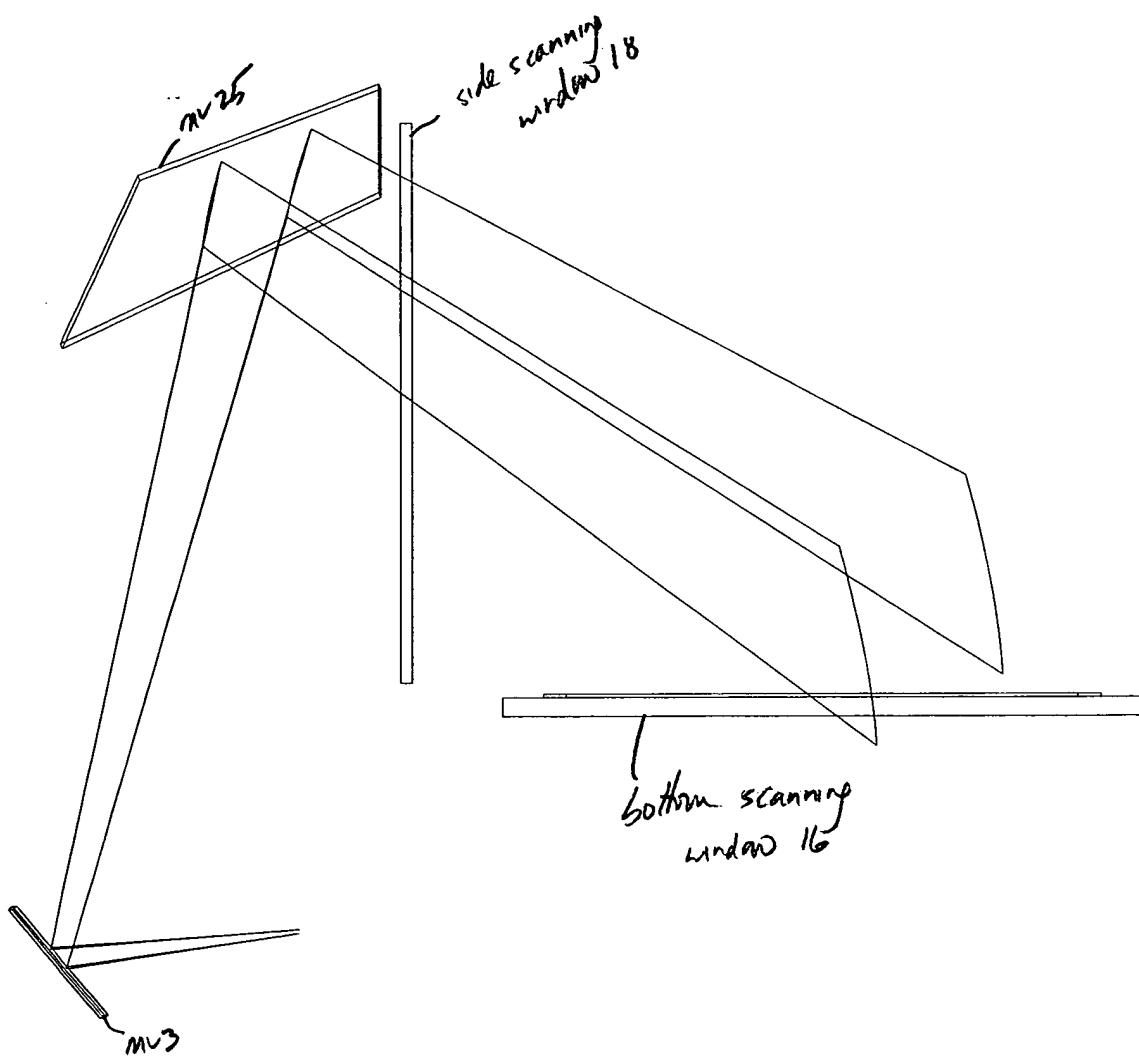
FIG. 5E1



51/88

FIG SE2

DO NOT SCALE DRAWINGS



52/80

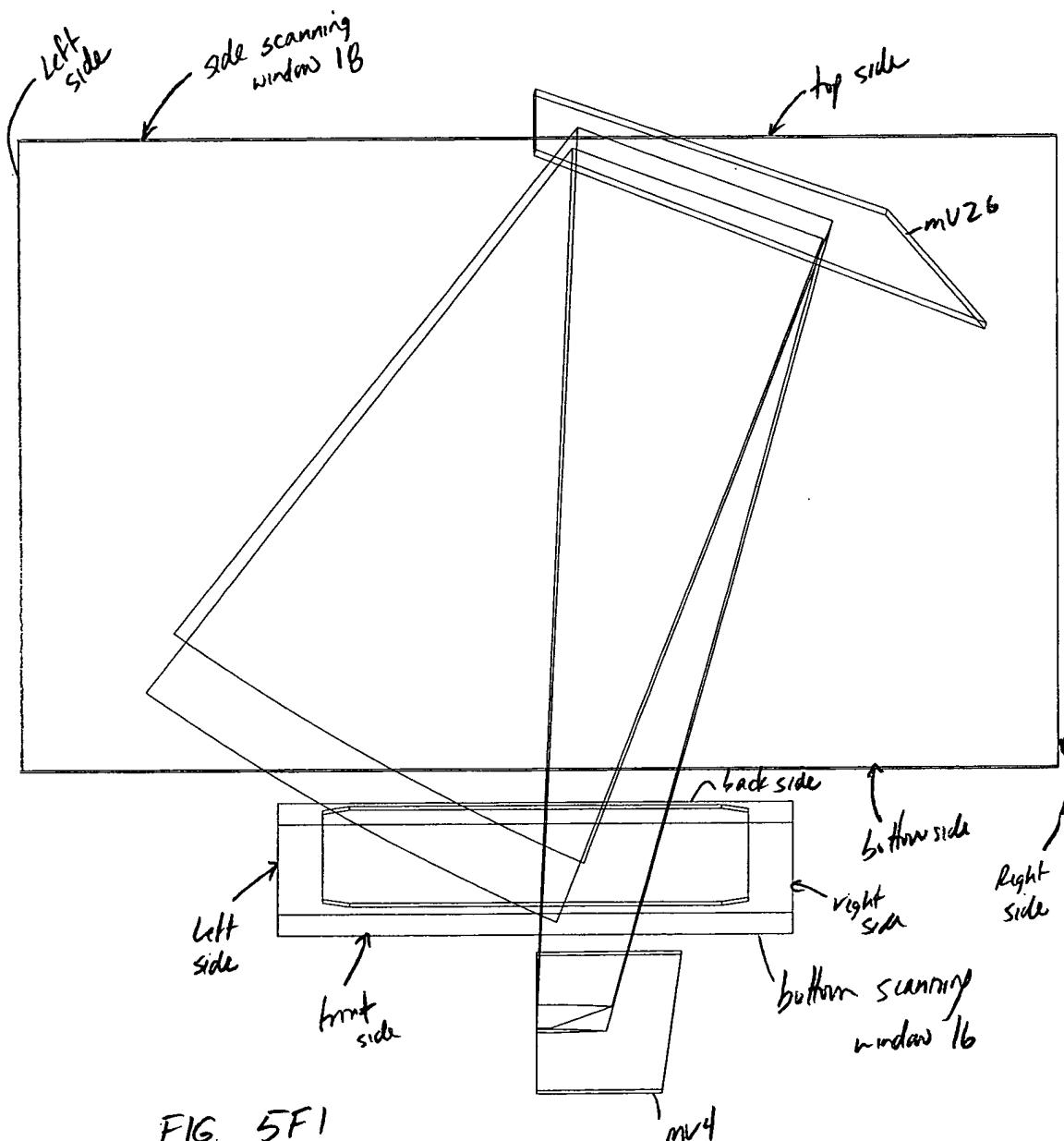


FIG. 5F1

53/88

FIG. 5F2

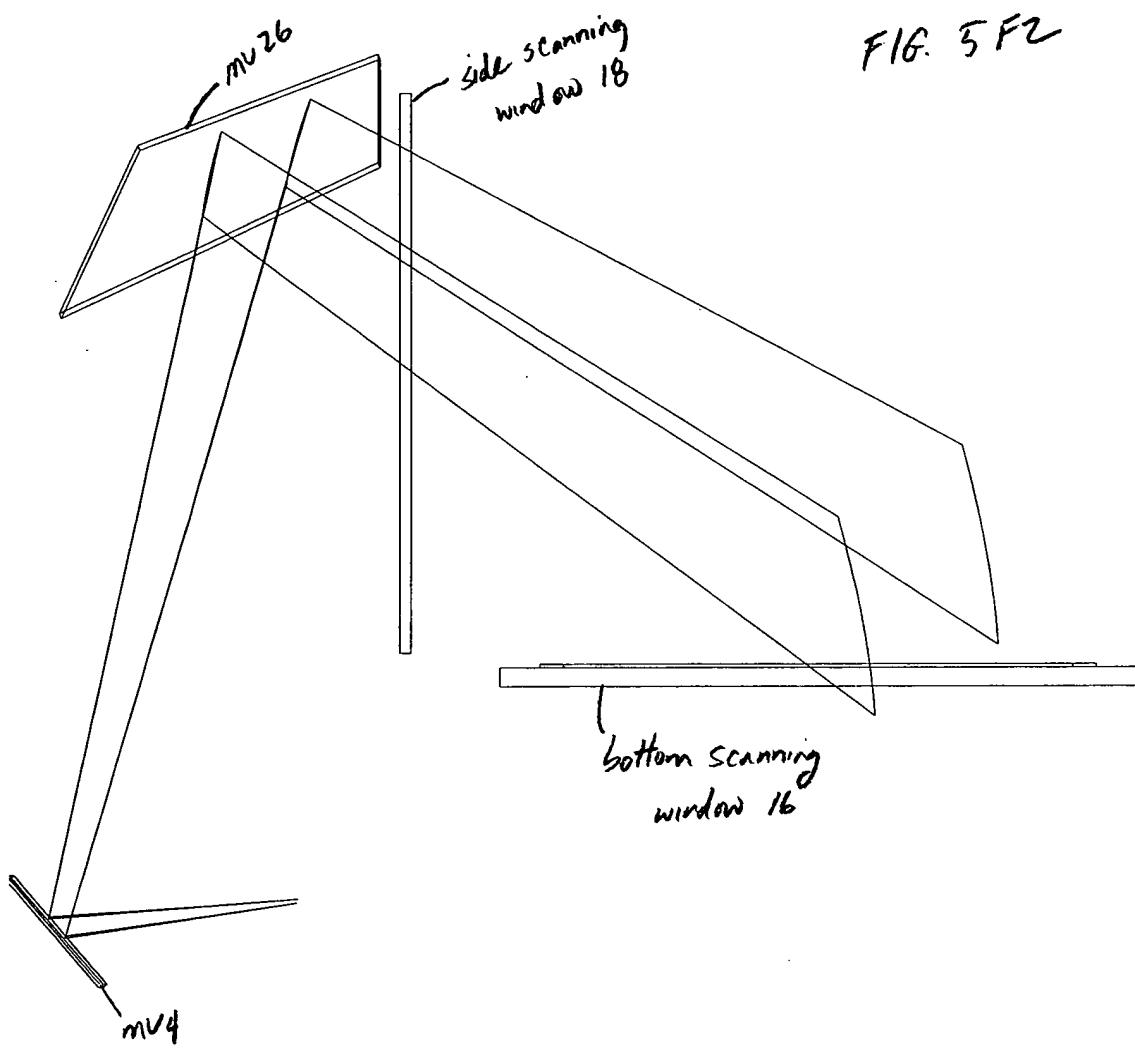
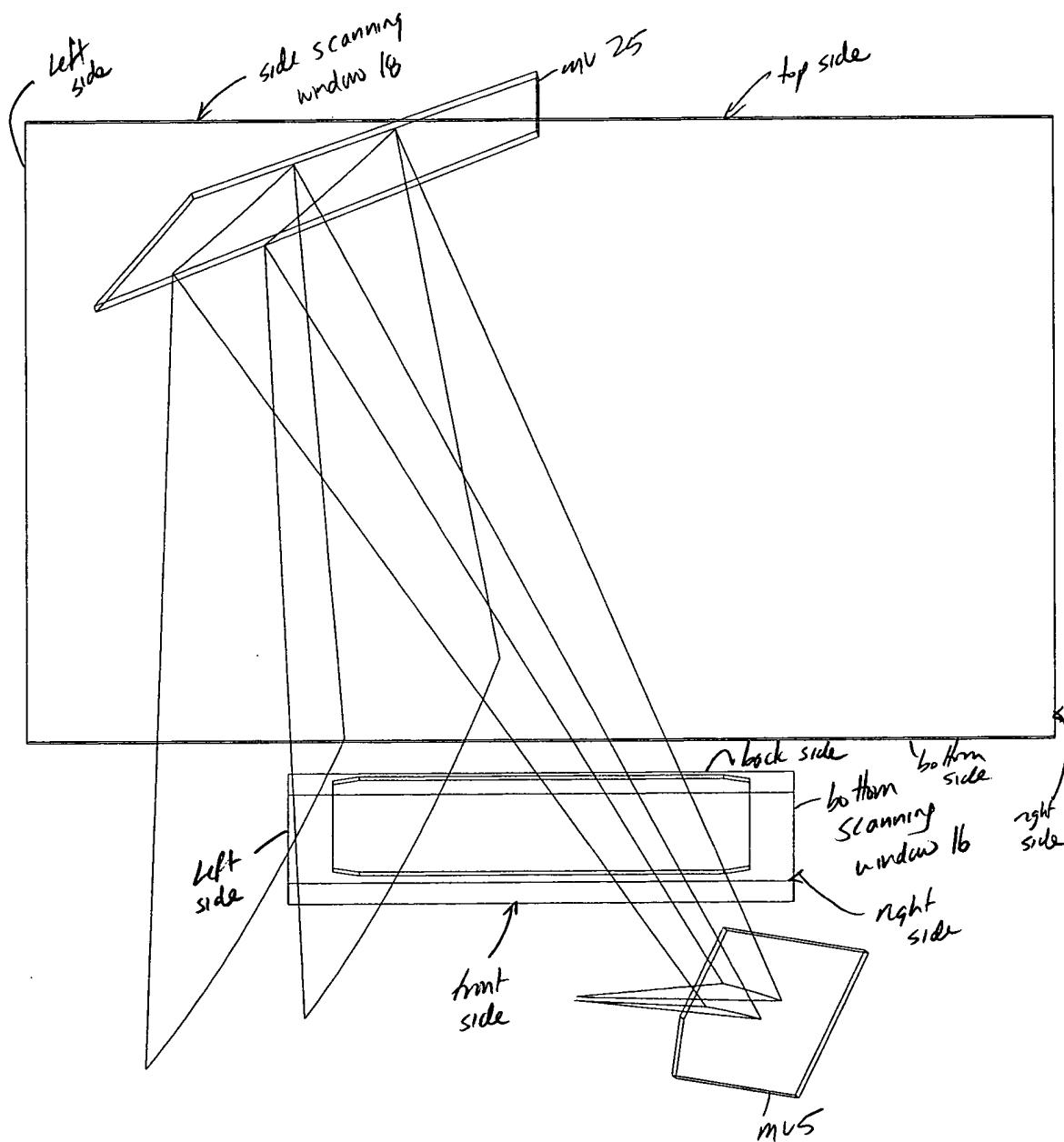


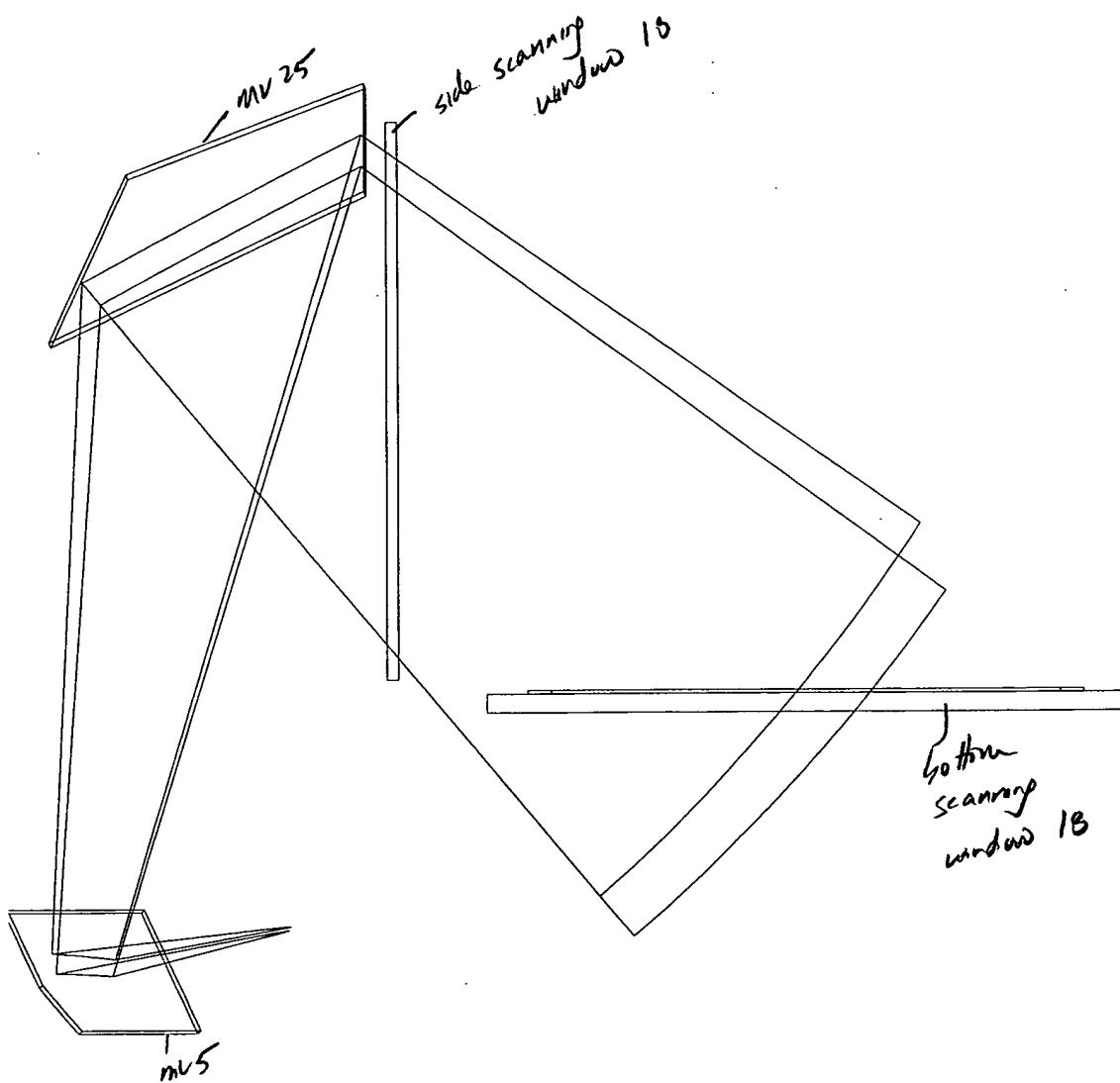
FIG. 5G1

54/88



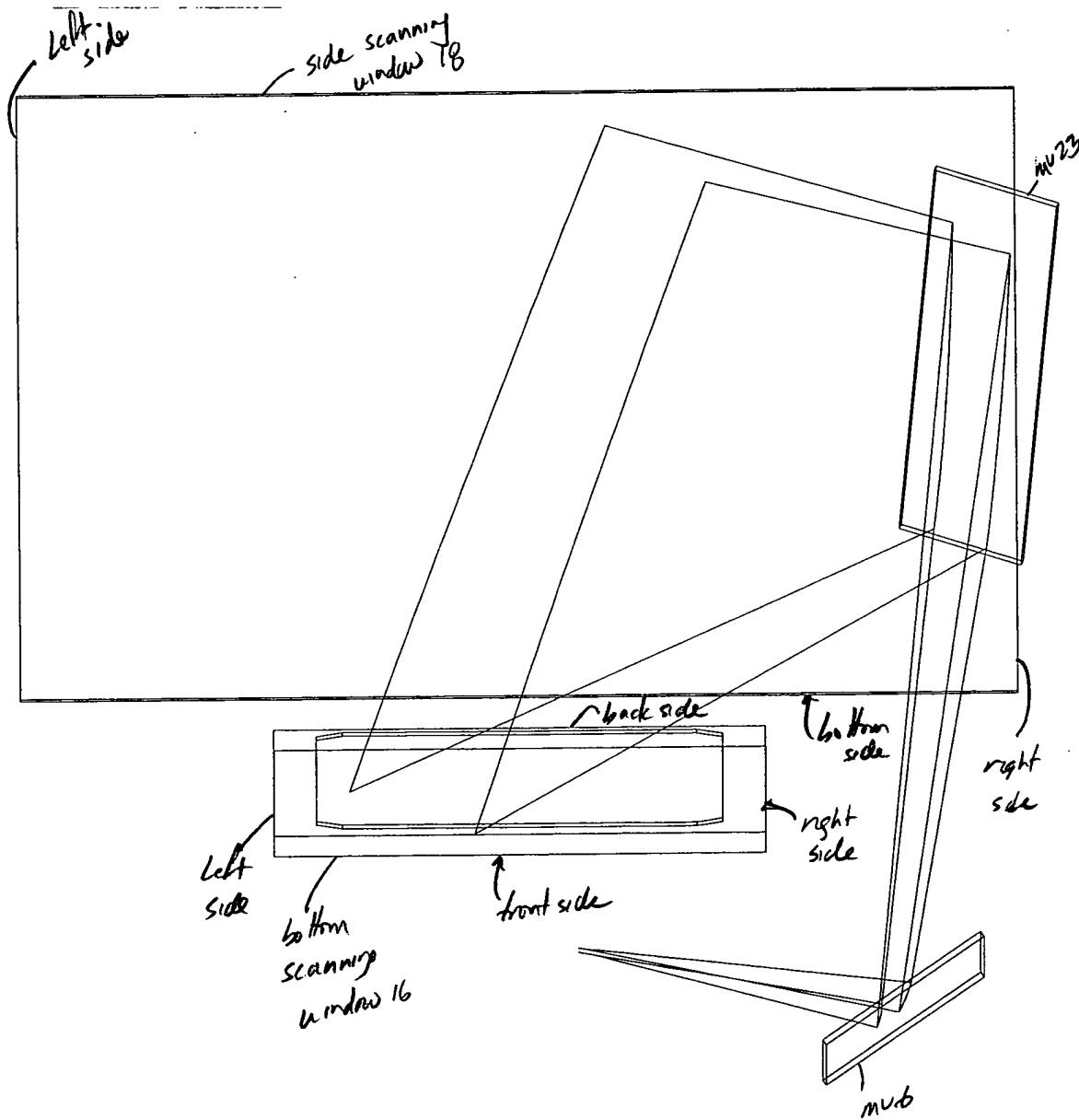
55/88

FIG. 562



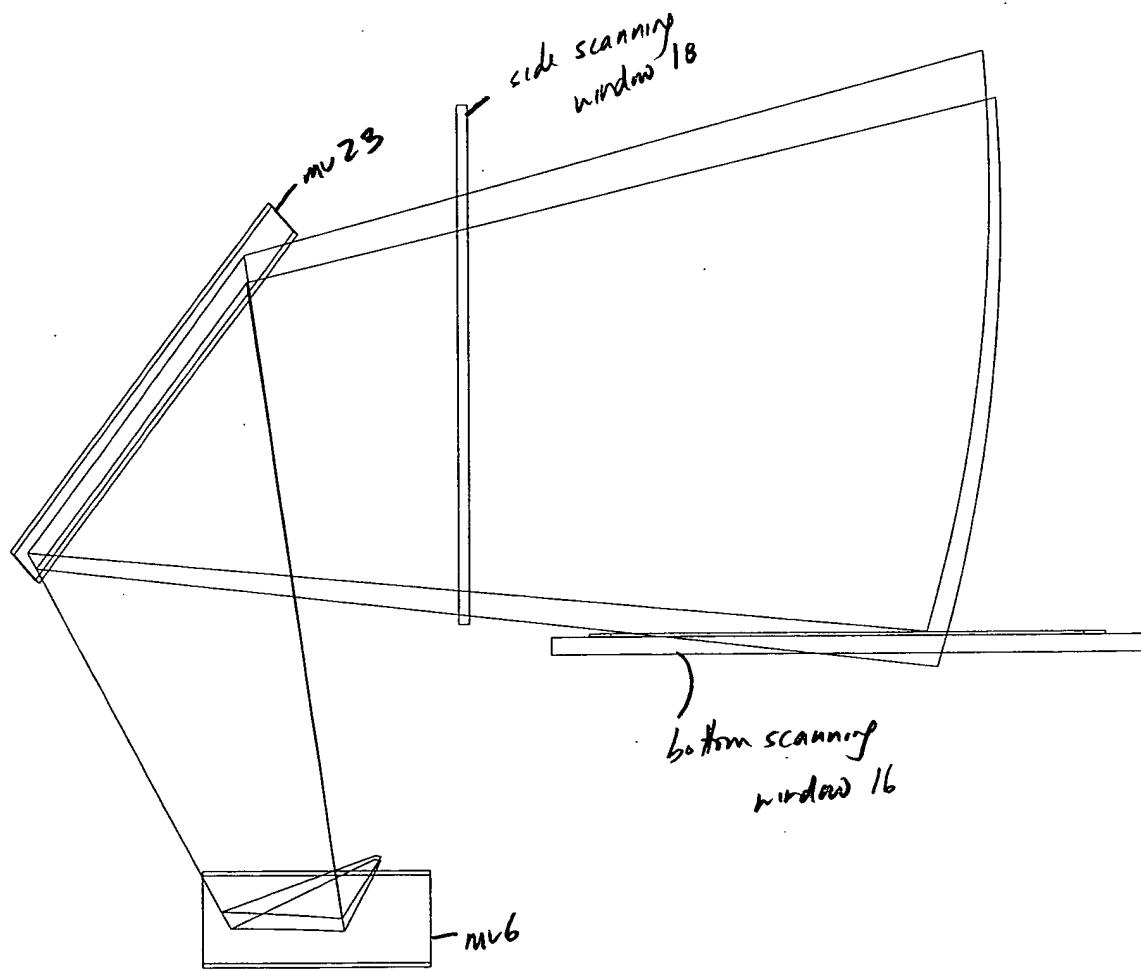
56/88

FIG. SH1



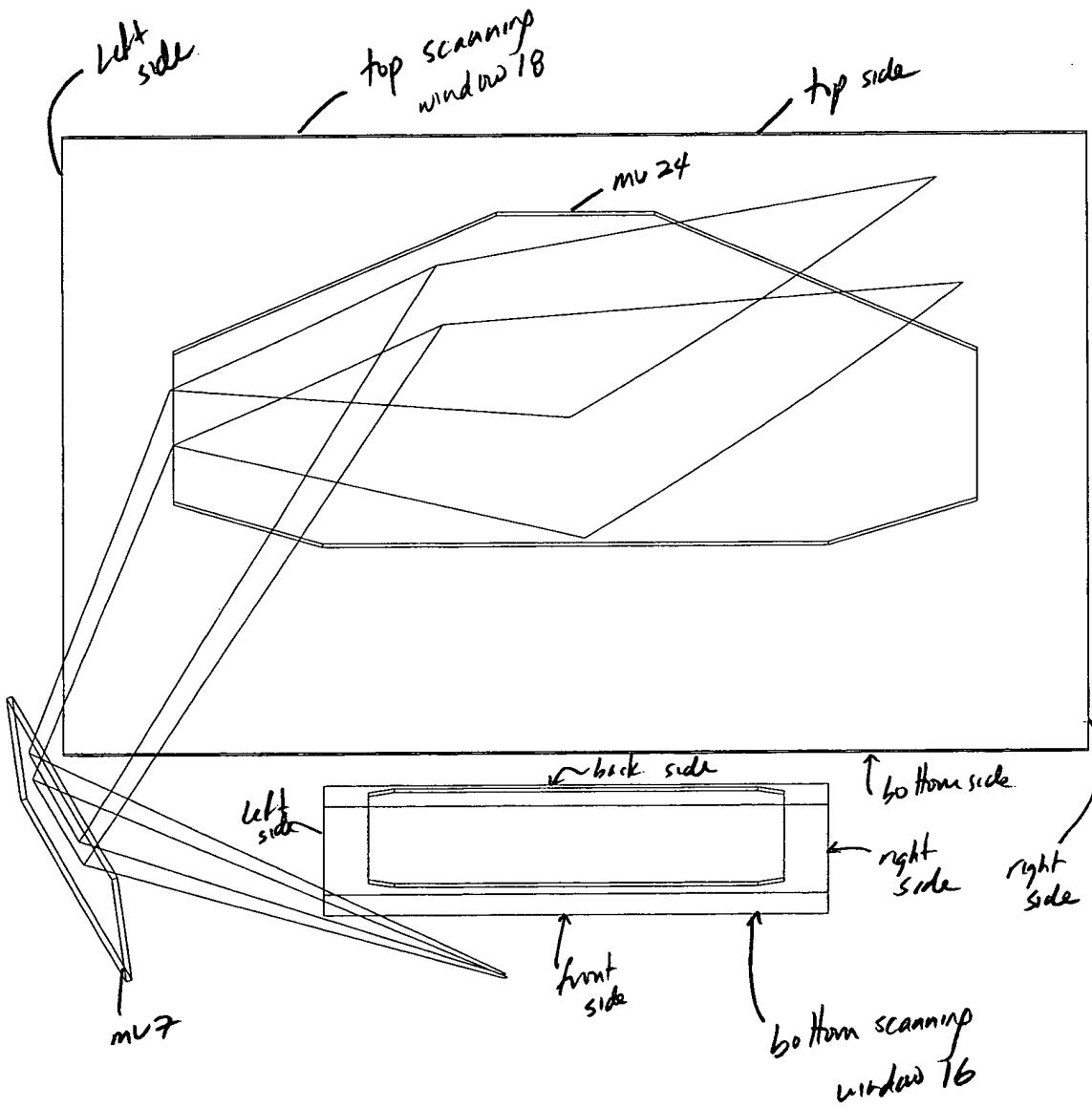
57 / 08

FIG 5H2



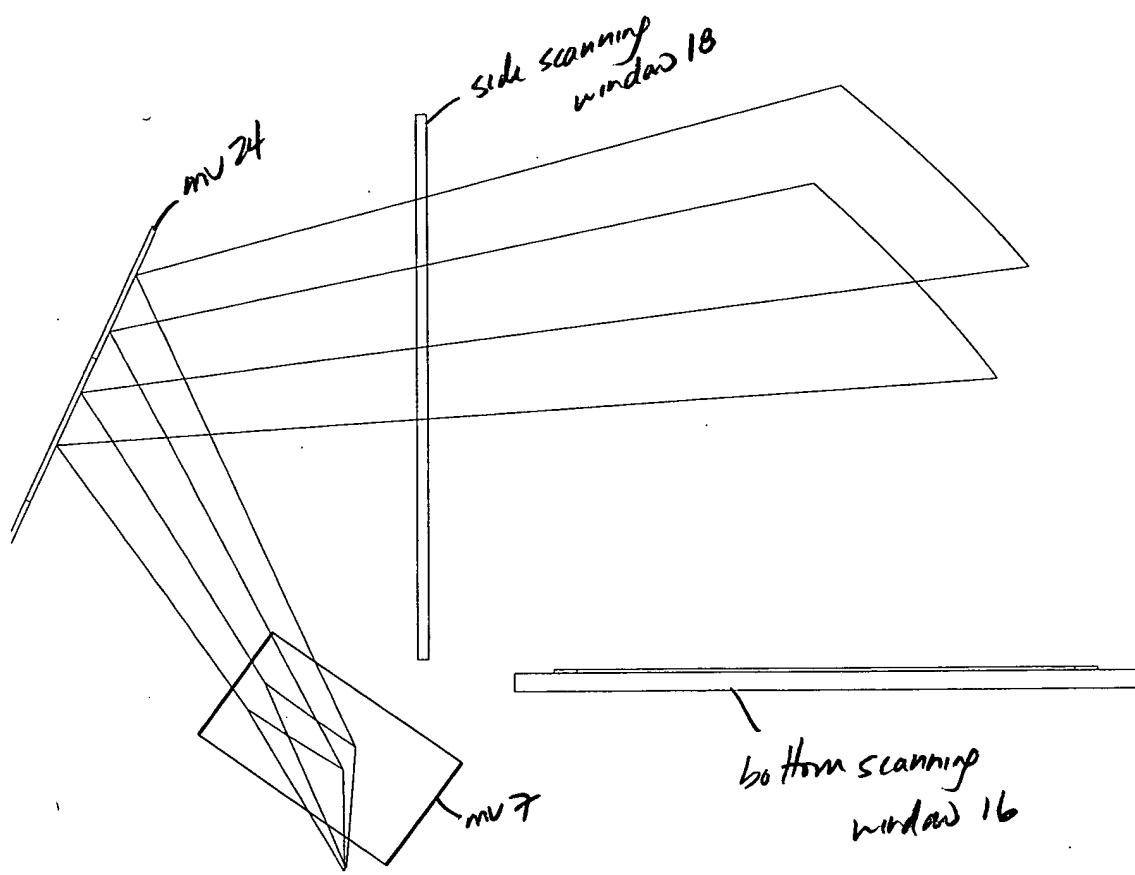
58/88

FIG. 5I1



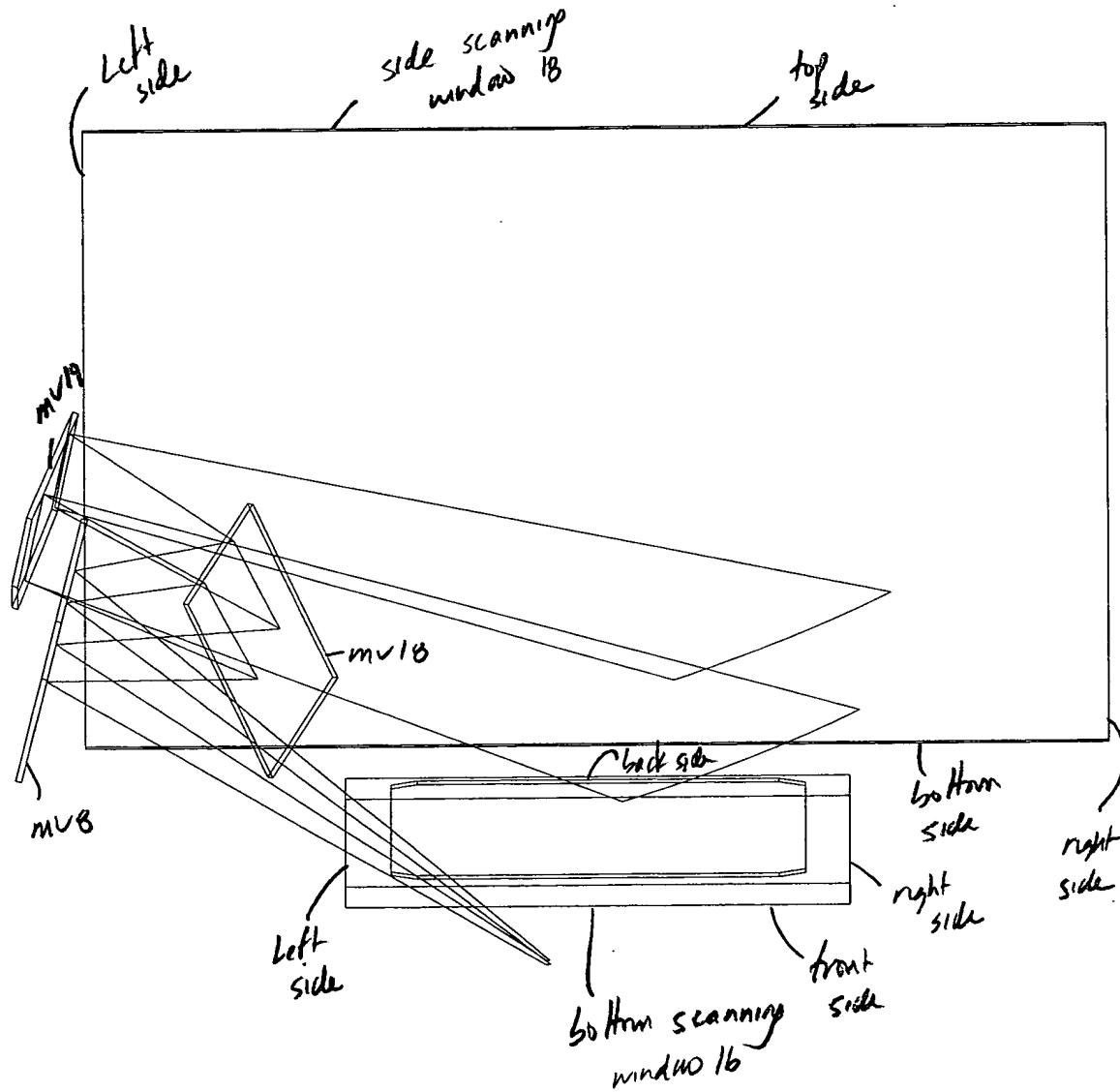
59/88

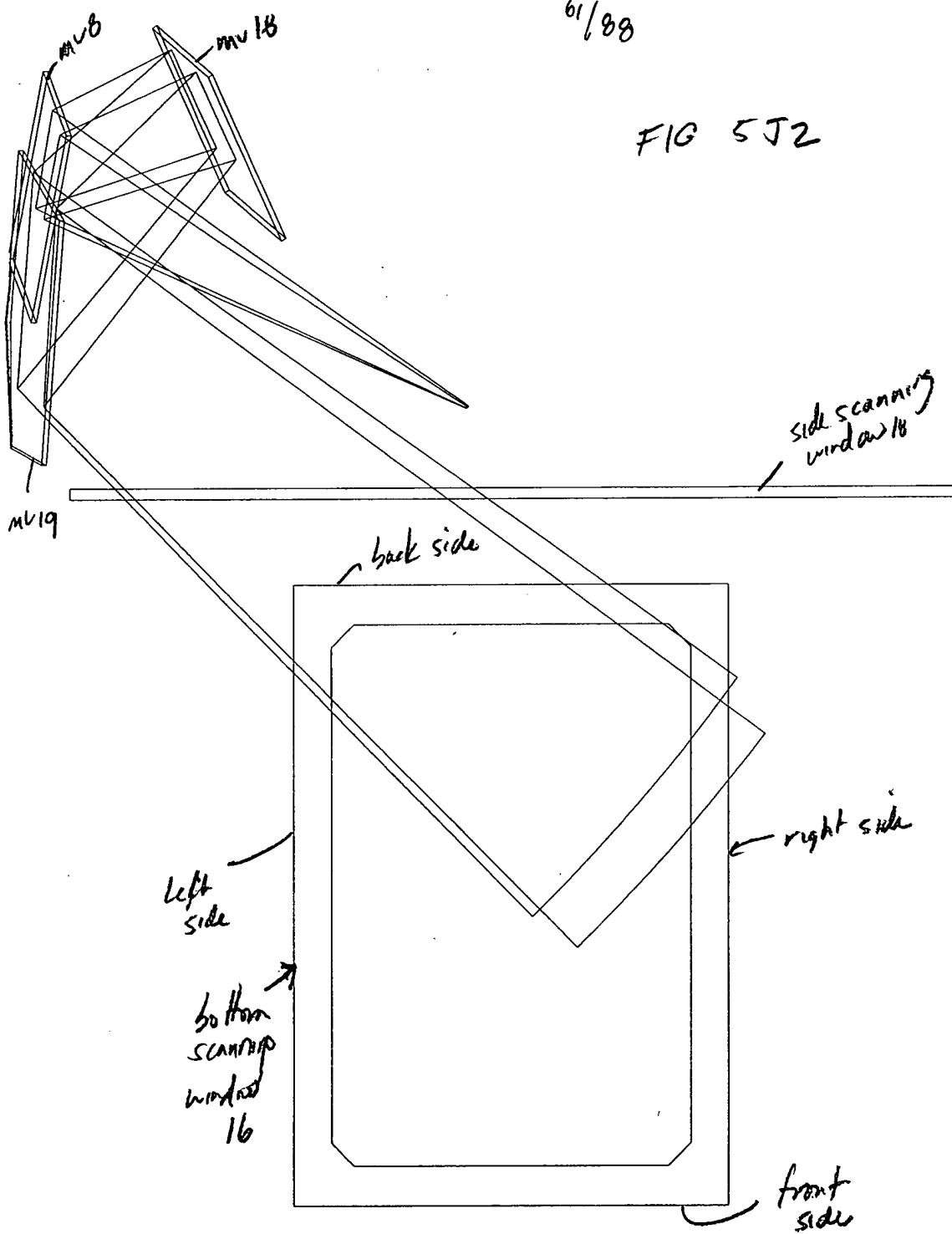
FIG. 512



60/88

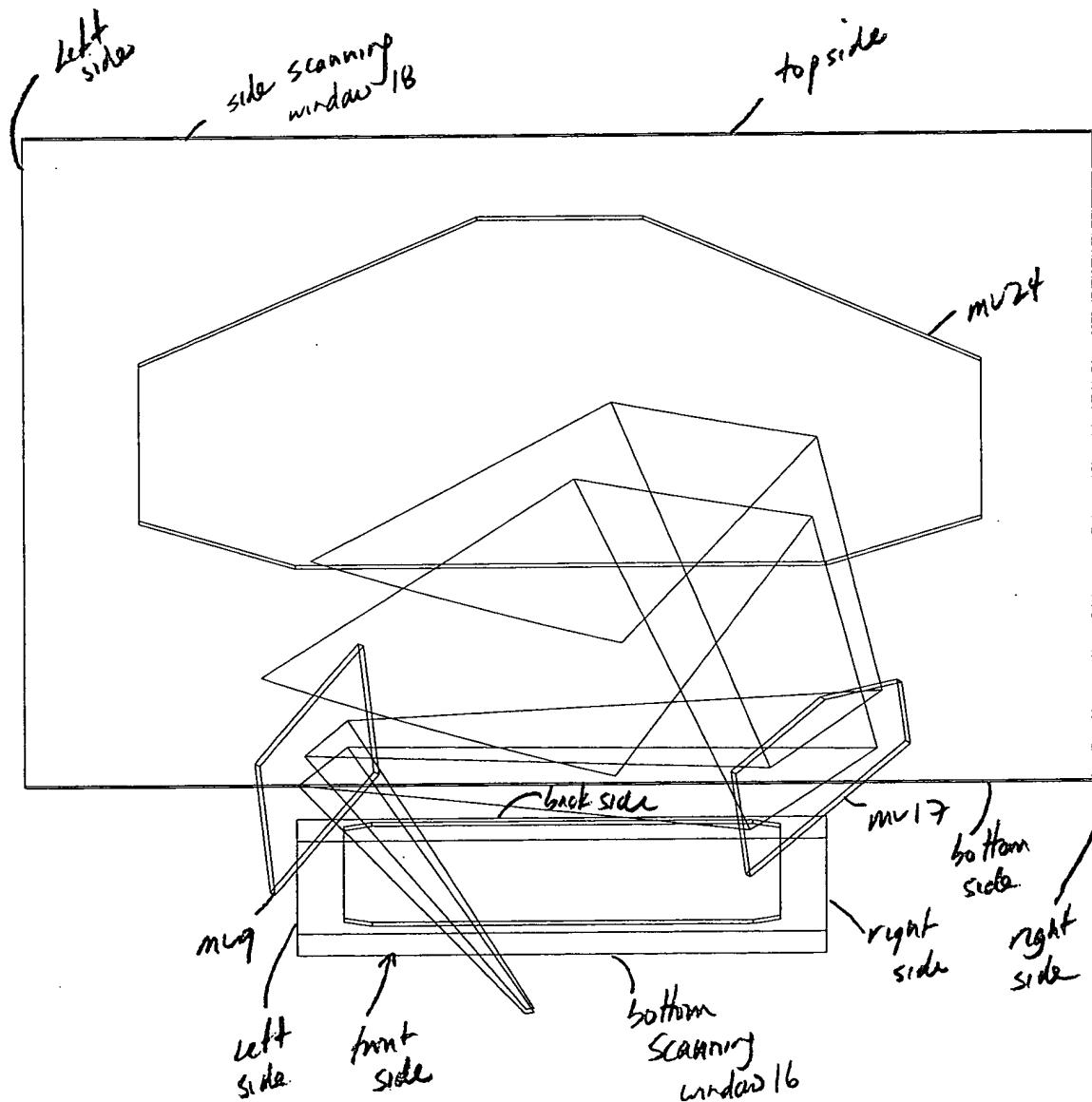
FIG. 5J1





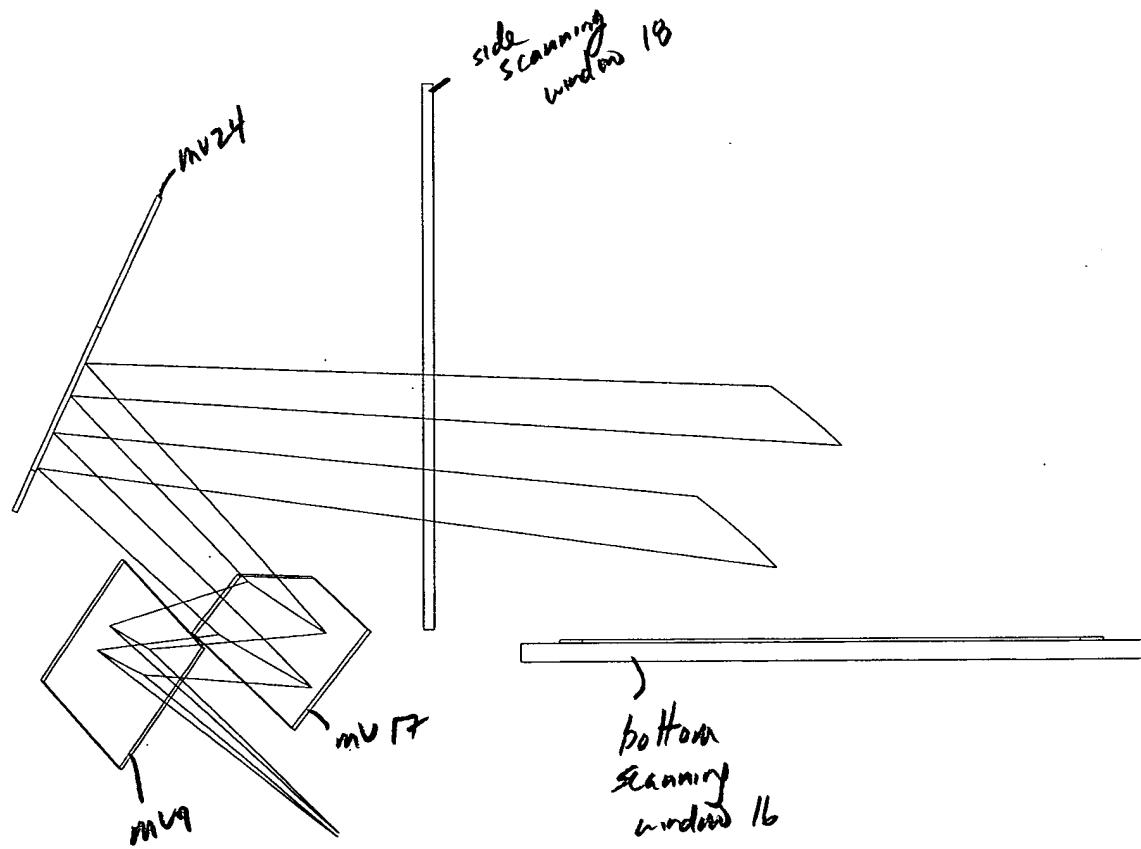
62/88

FIG. SKI



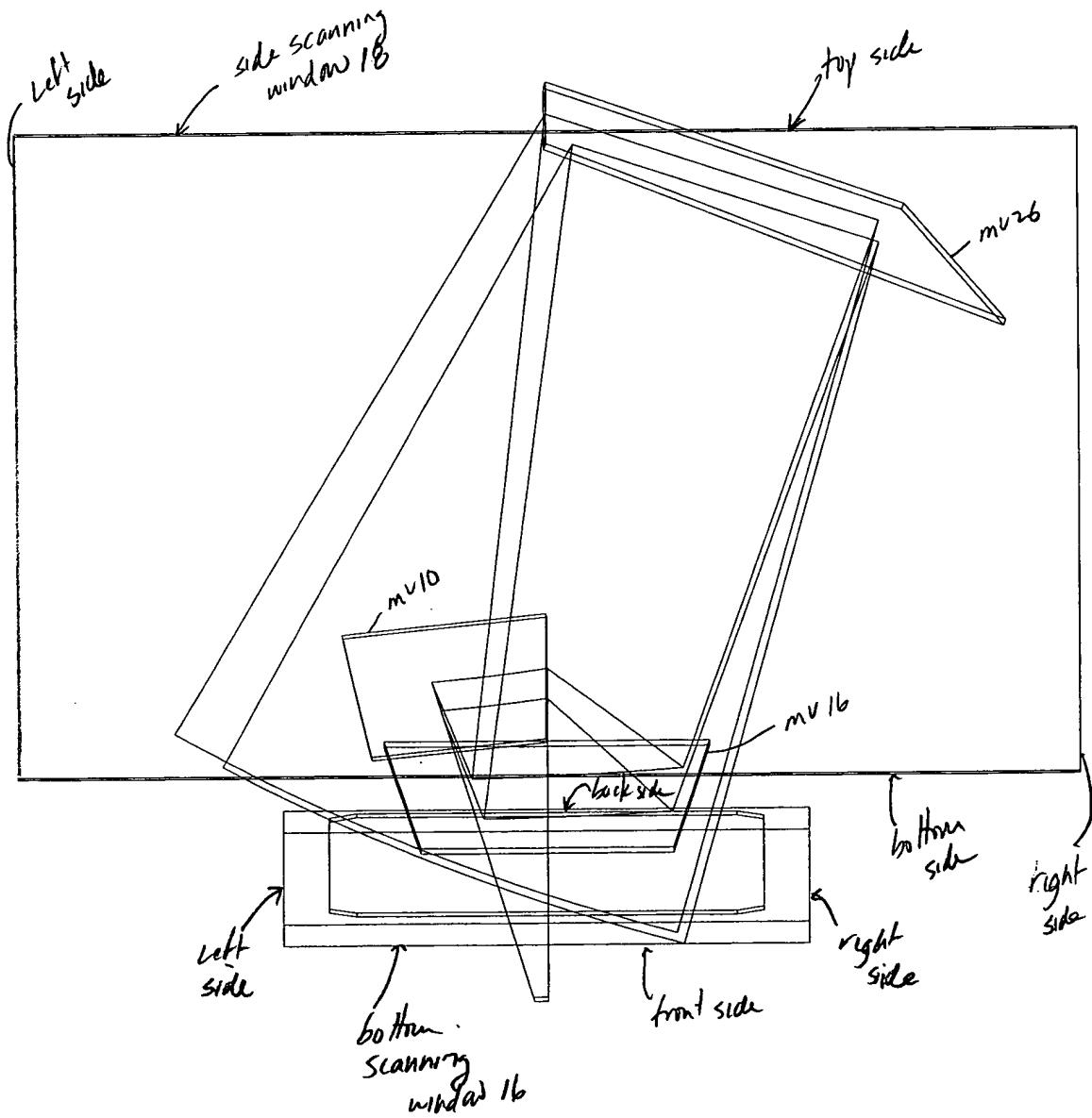
63/88

FIG. SK2



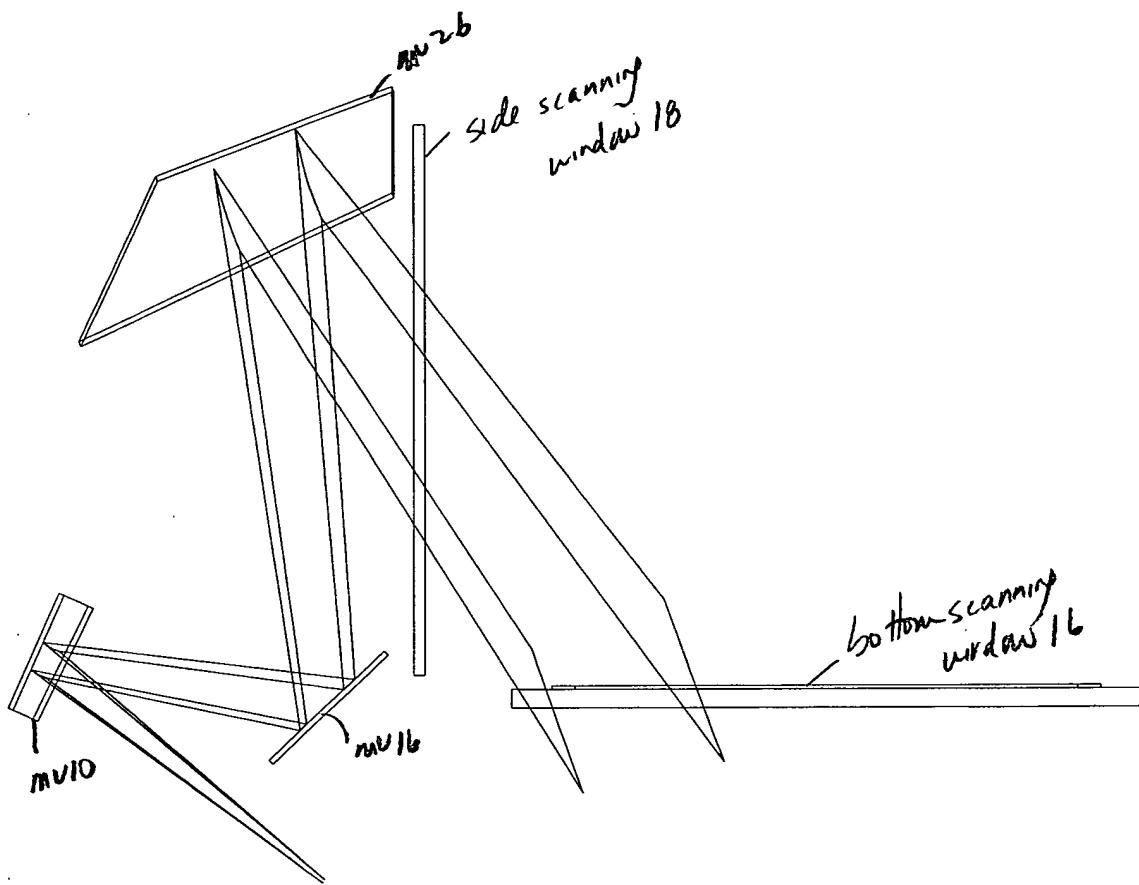
64/88

FIG. 5L1



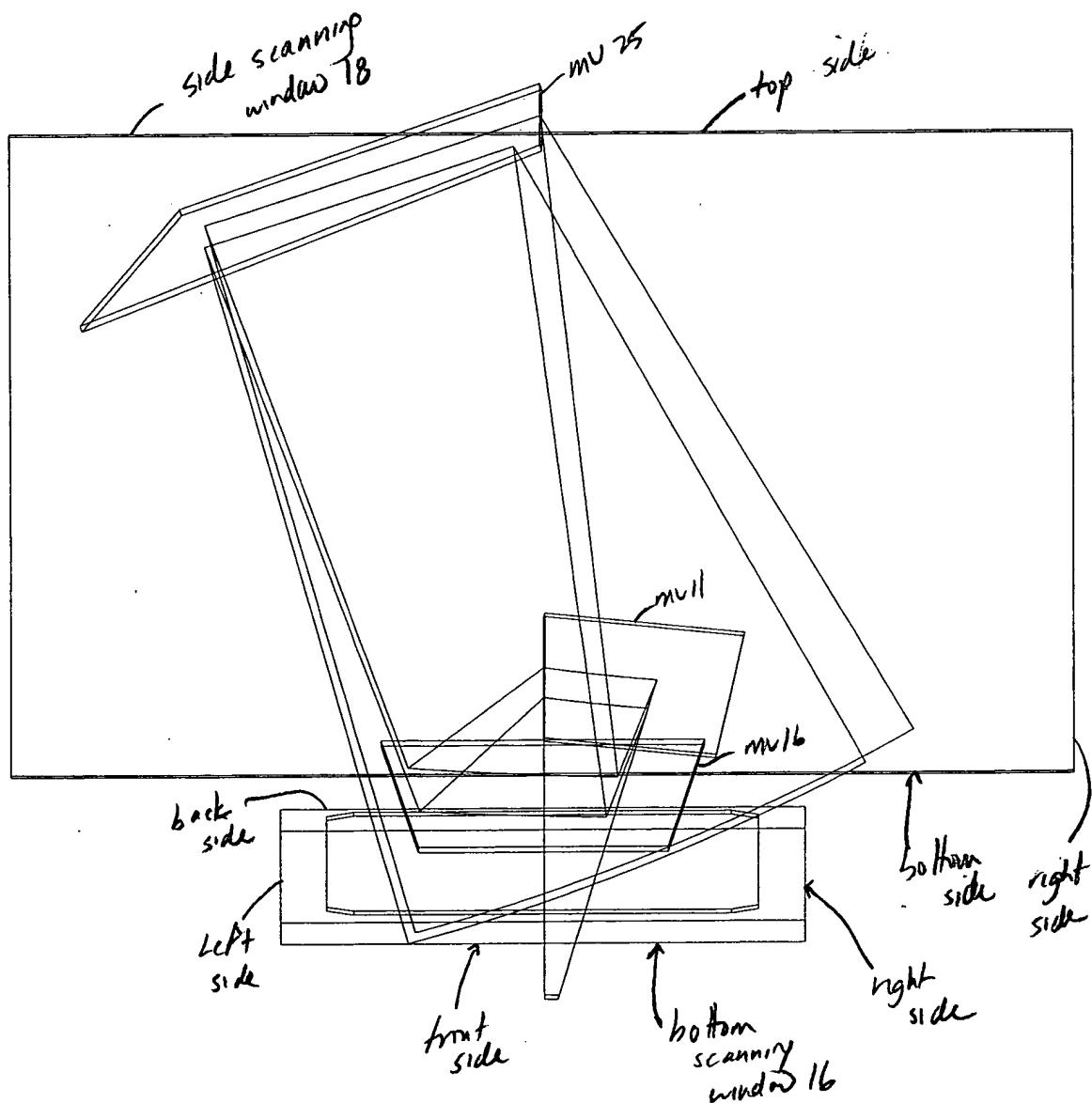
65/88

FIG. 5L2



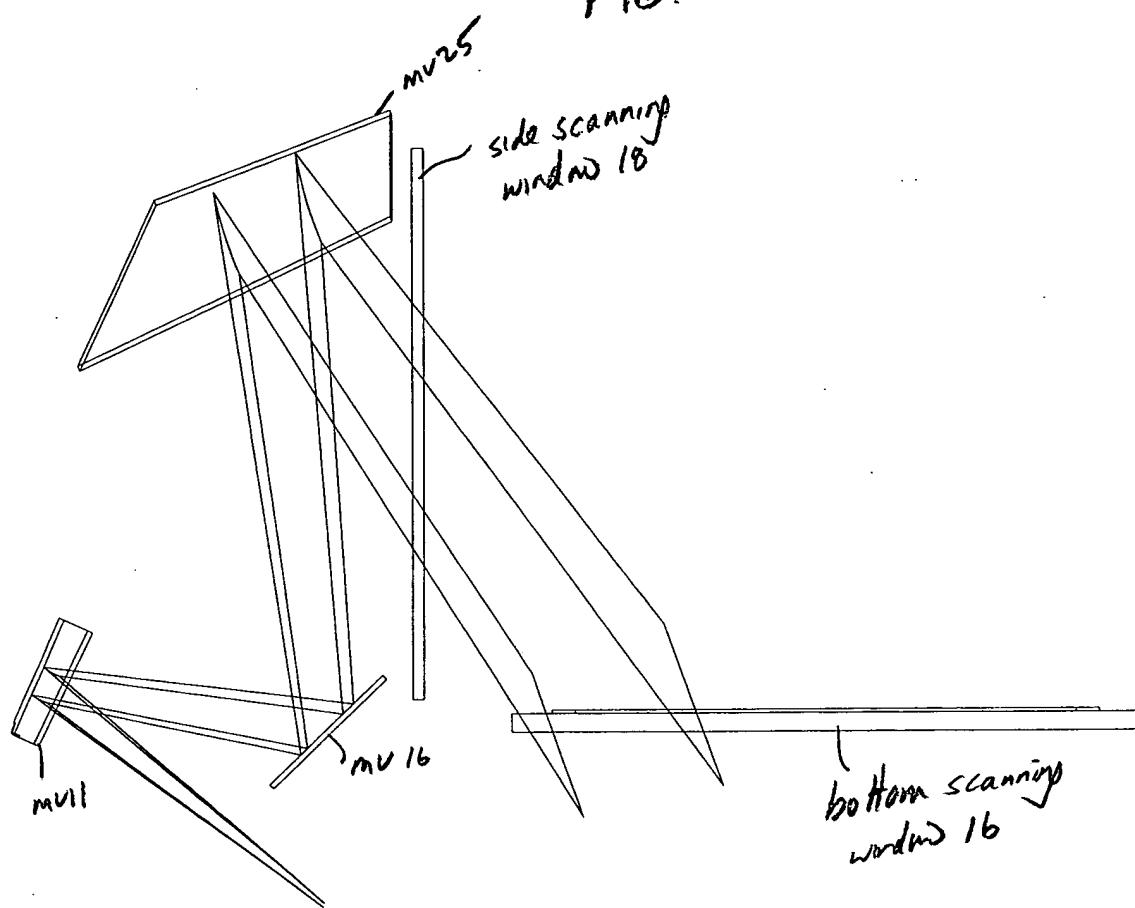
66/88

FIG. SMI



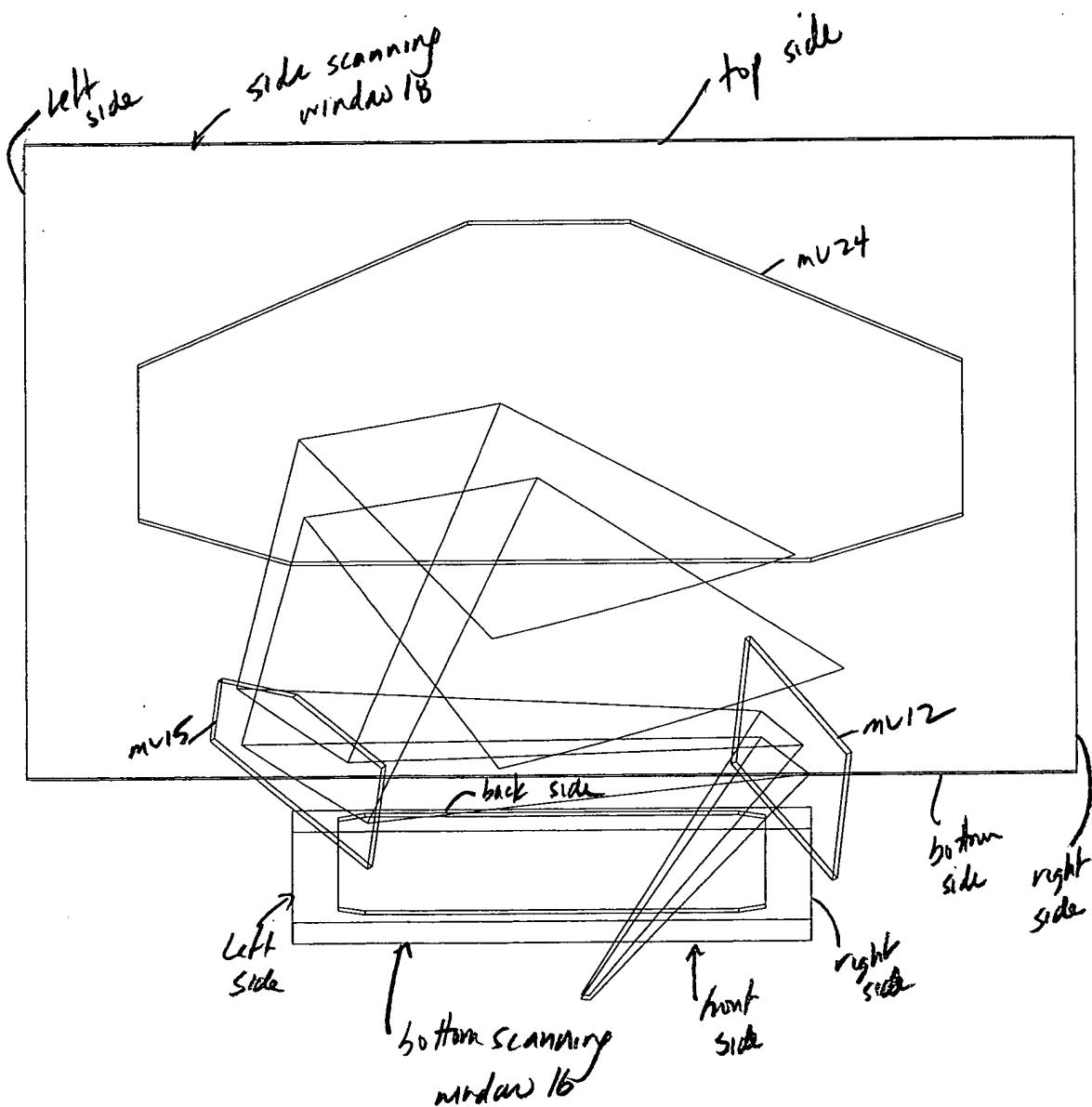
67/88

FIG. SM2



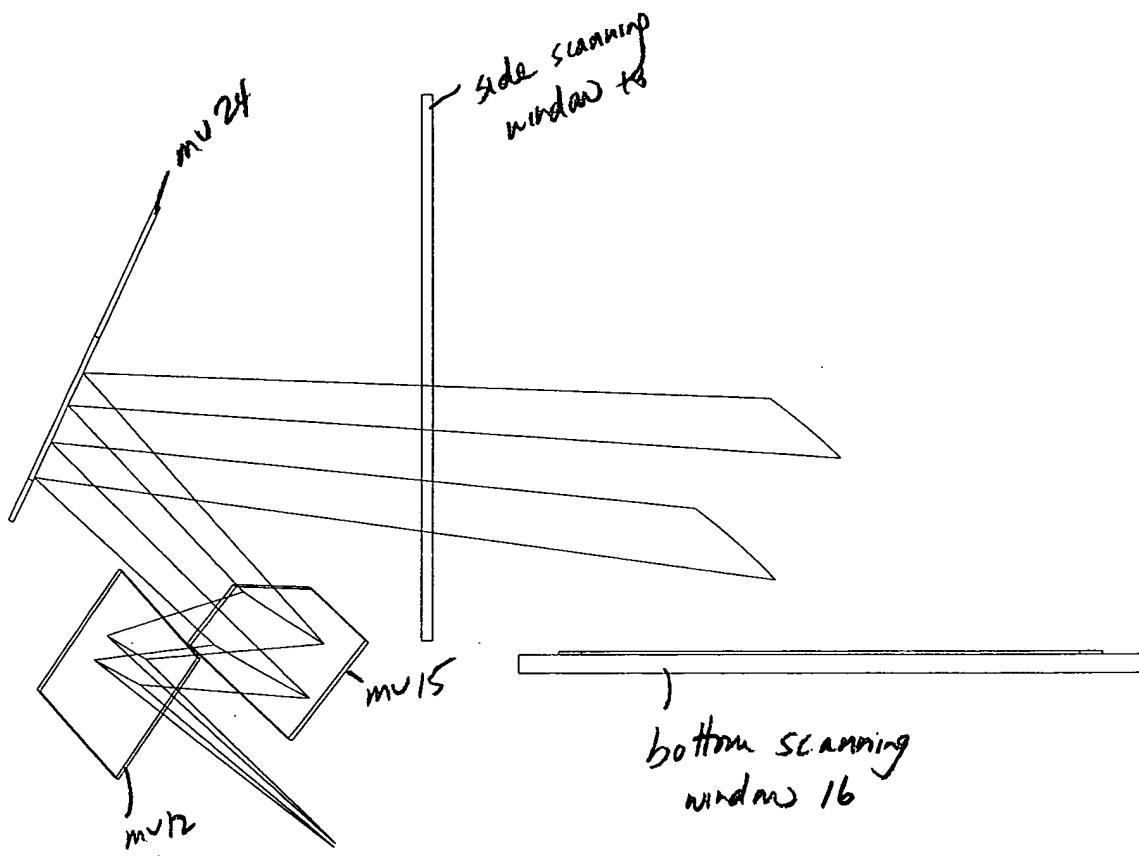
68/08

FIG. 5N1



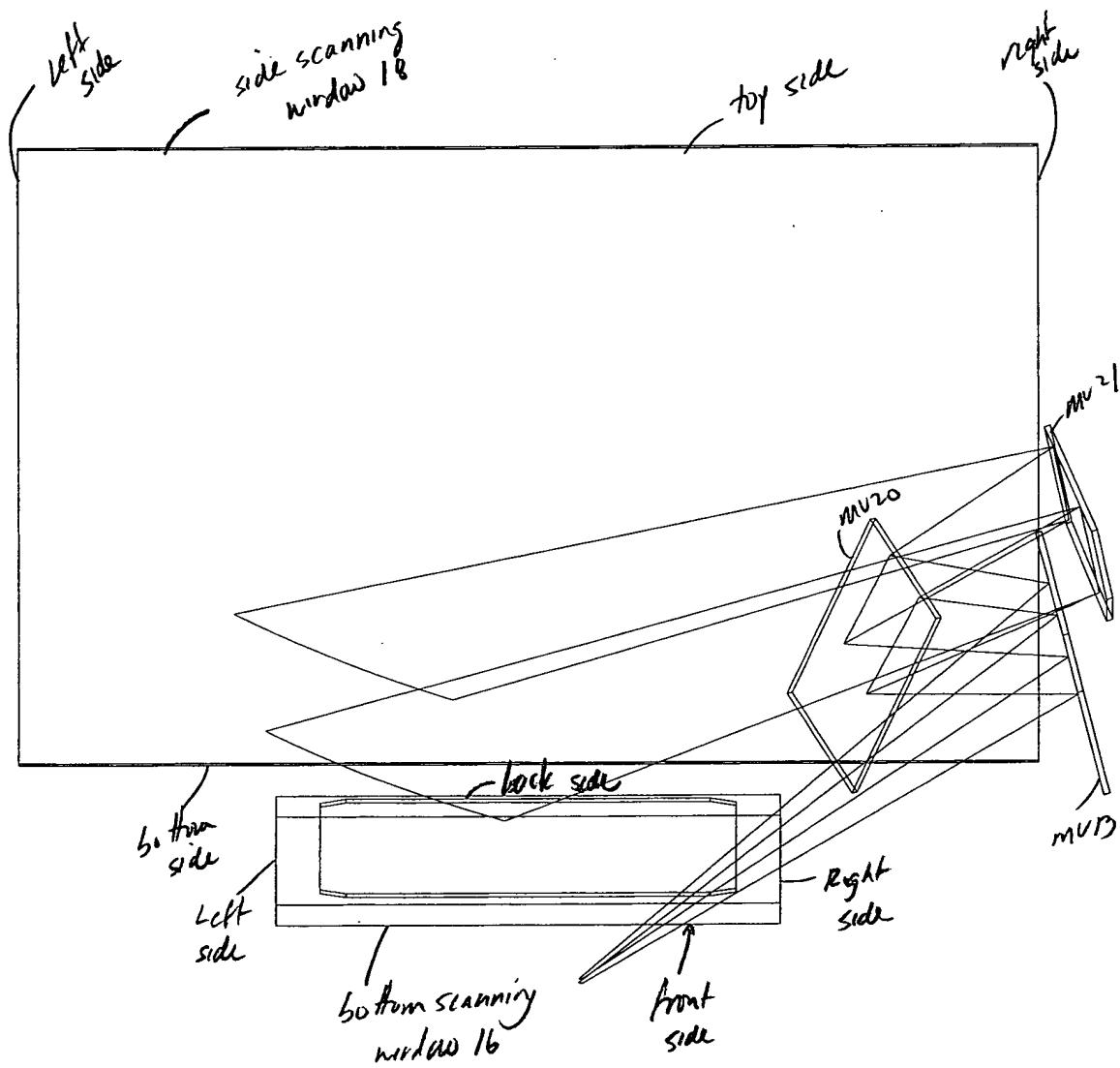
69/88

FIG. SN2



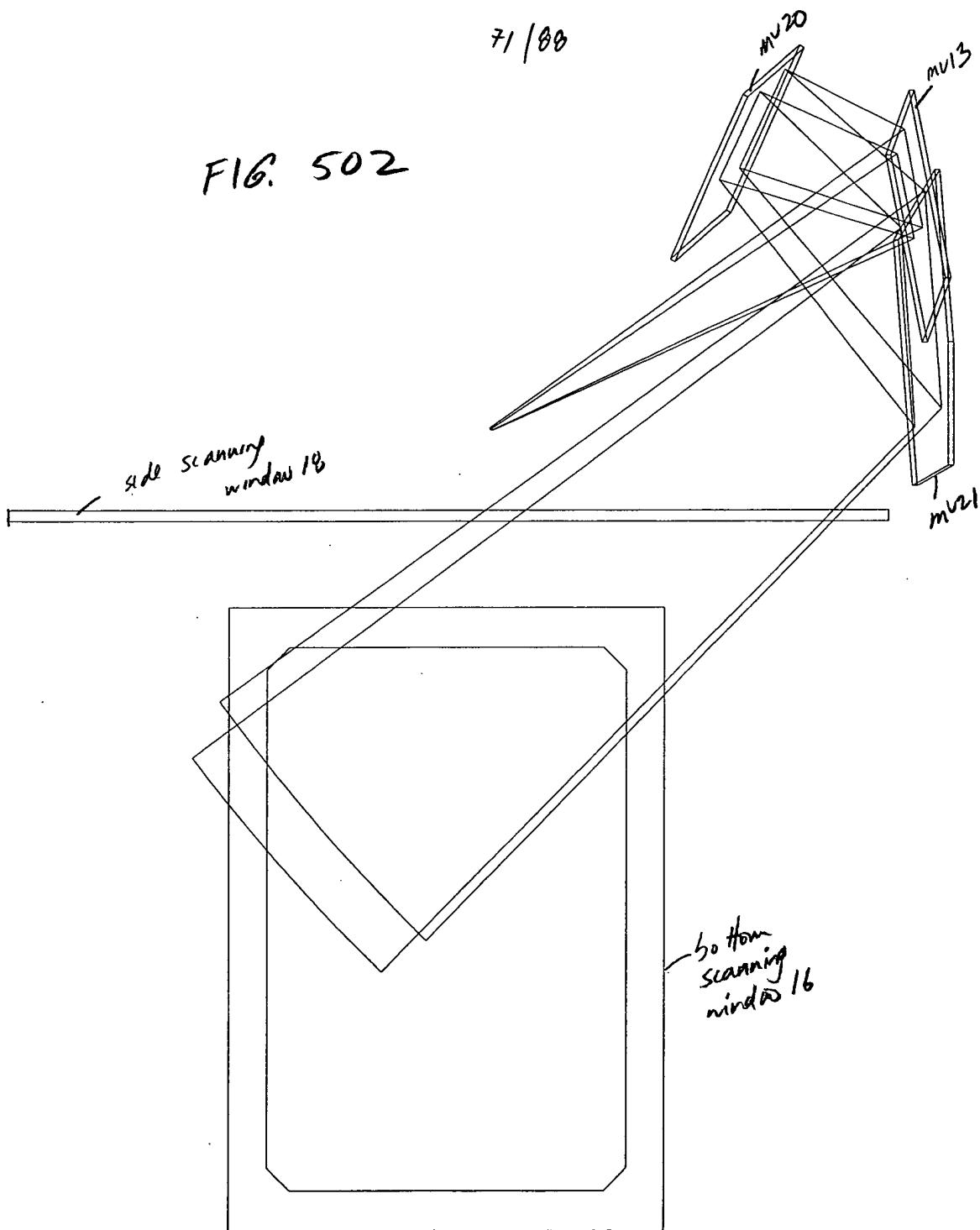
70 / 88

FIG. 501



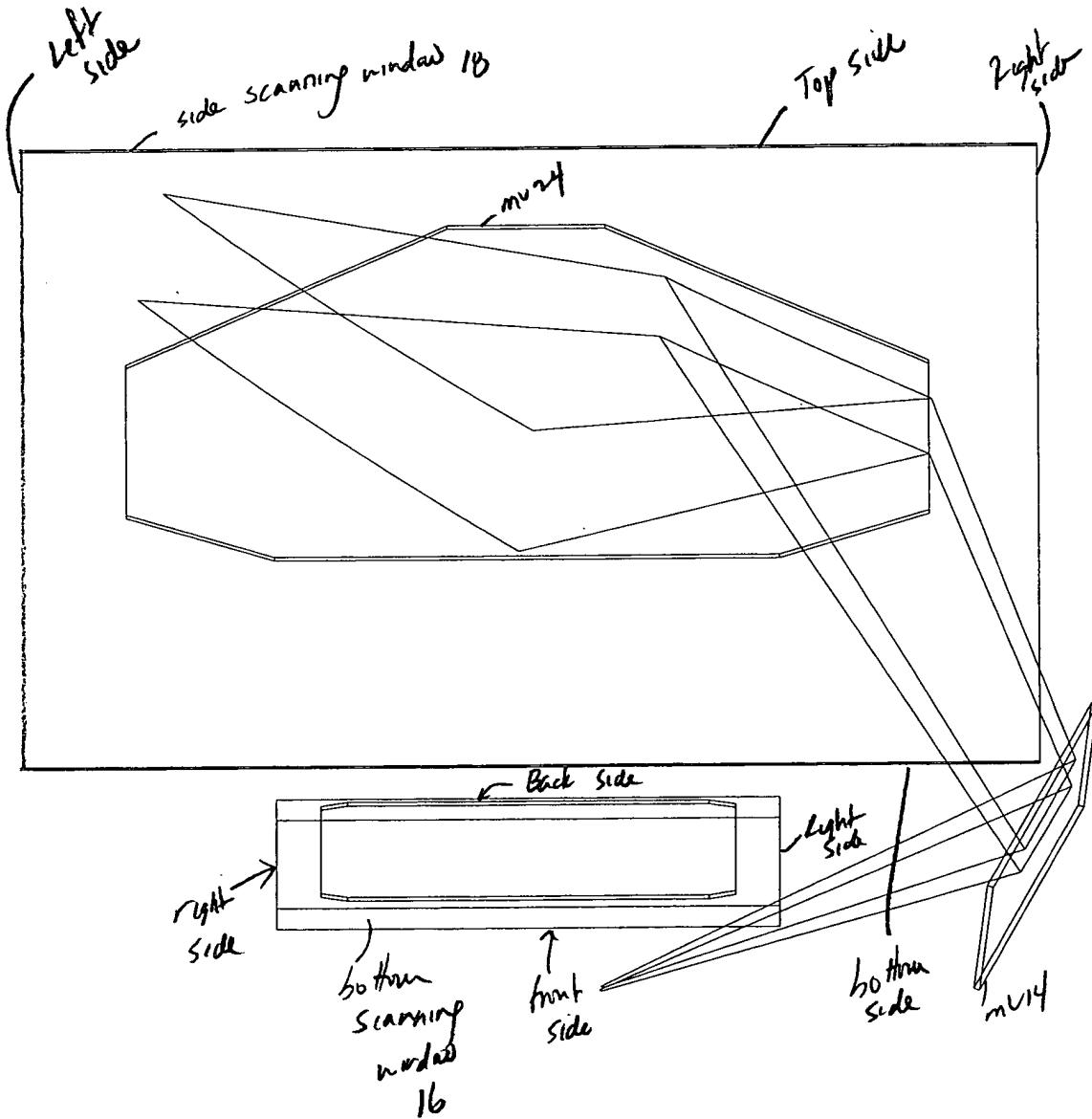
71/08

FIG. 502



72/88

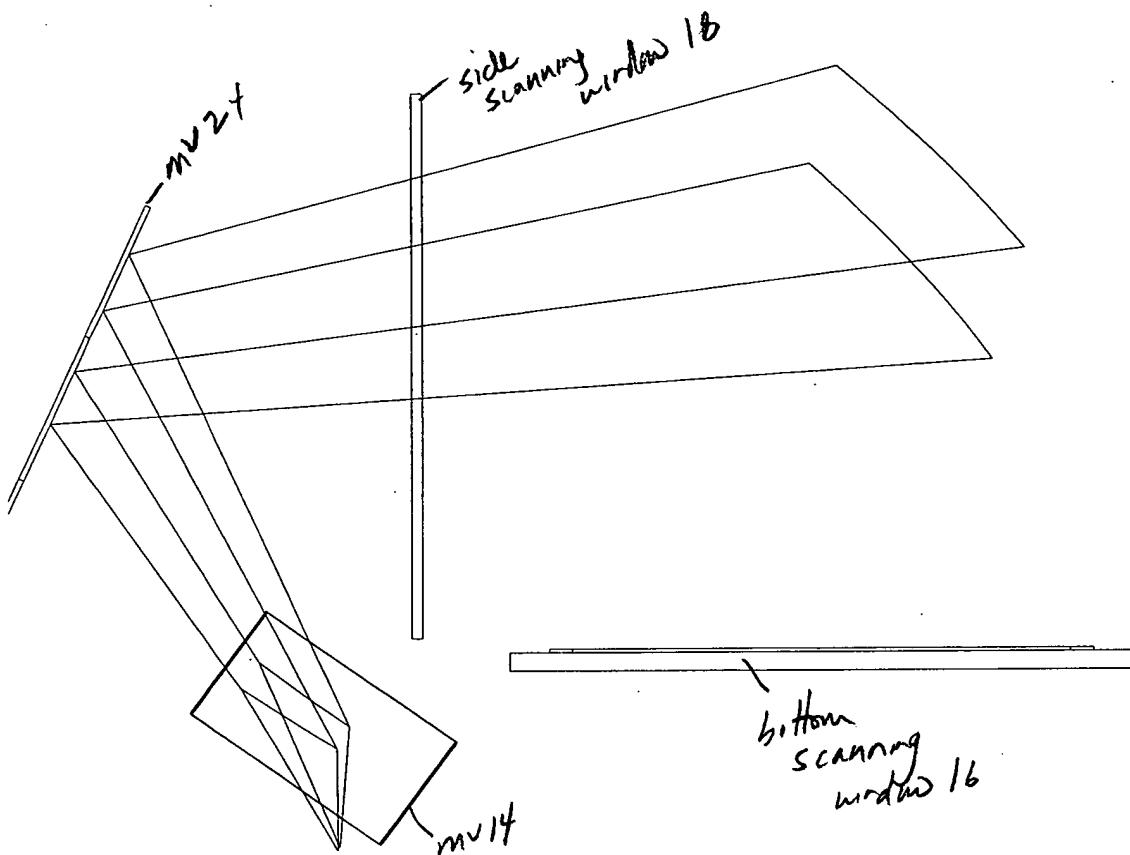
FIG. SPI



73/88

FIG. 5P2

mv27 mv14



.....

← Resolution of PM1 → ← Resolution of PM1 →

HST1	GH1	GH2	GH3	GH4	GH1	GH2	GH3	GH4
HST2	GH4	GH5	GH6	GH7	GH4	GH5	GH6	GH7

← ← Resolution of PM2 → →

VST1	GV1	GV2	GV3	GV4	GV5	GV6	GV7	GV8	GV9	GV10	GV11	GV12	GV13	GV14
------	-----	-----	-----	-----	-----	-----	-----	-----	-----	------	------	------	------	------

74 / 88

FIG. 6

75/88

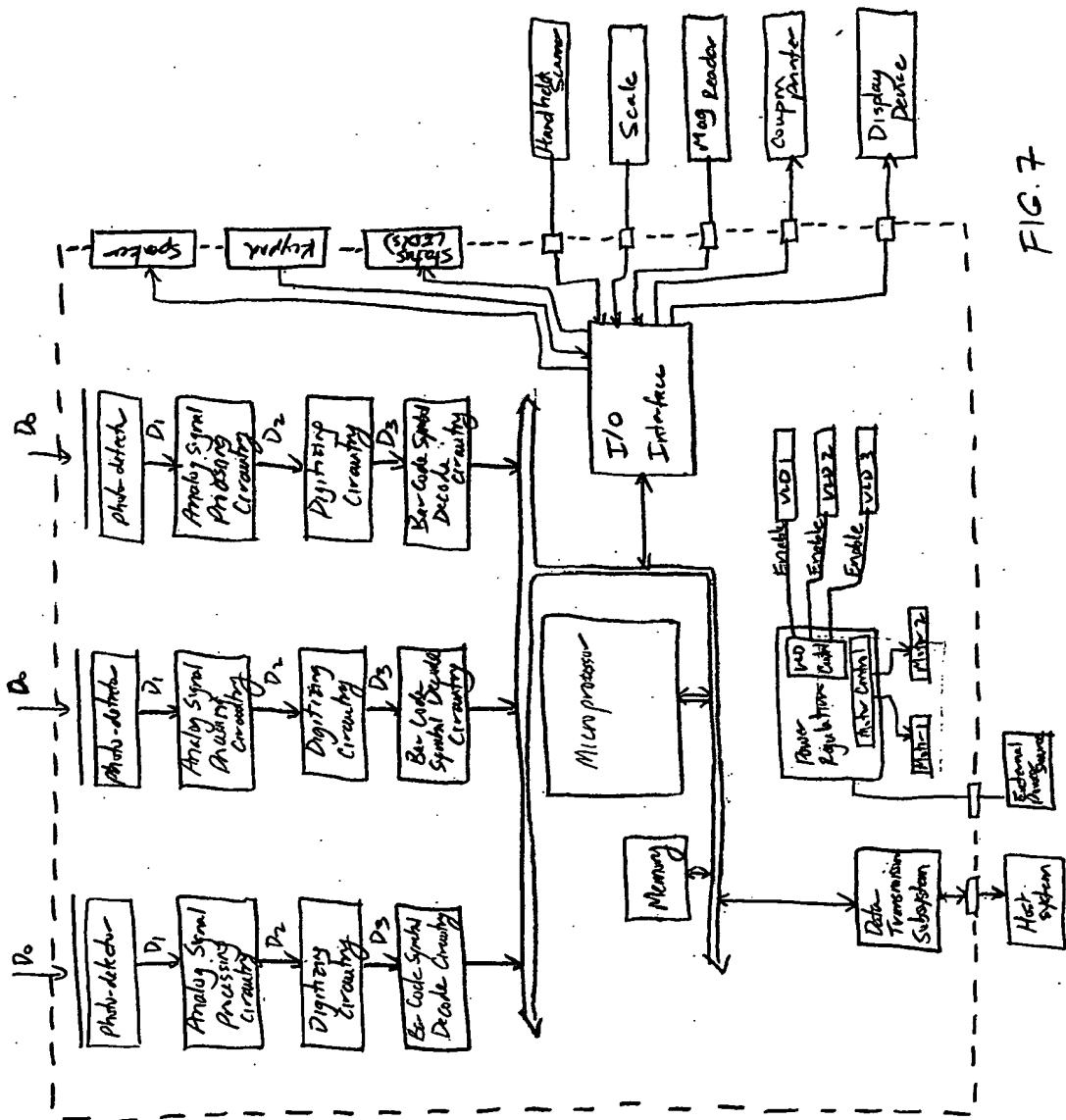


FIG. 7

76/88

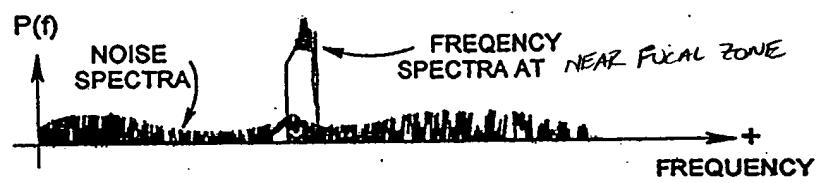


FIG. 8A

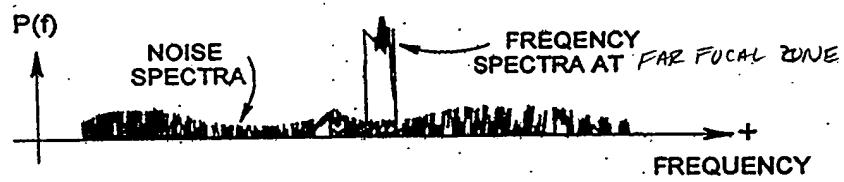


FIG. 8B

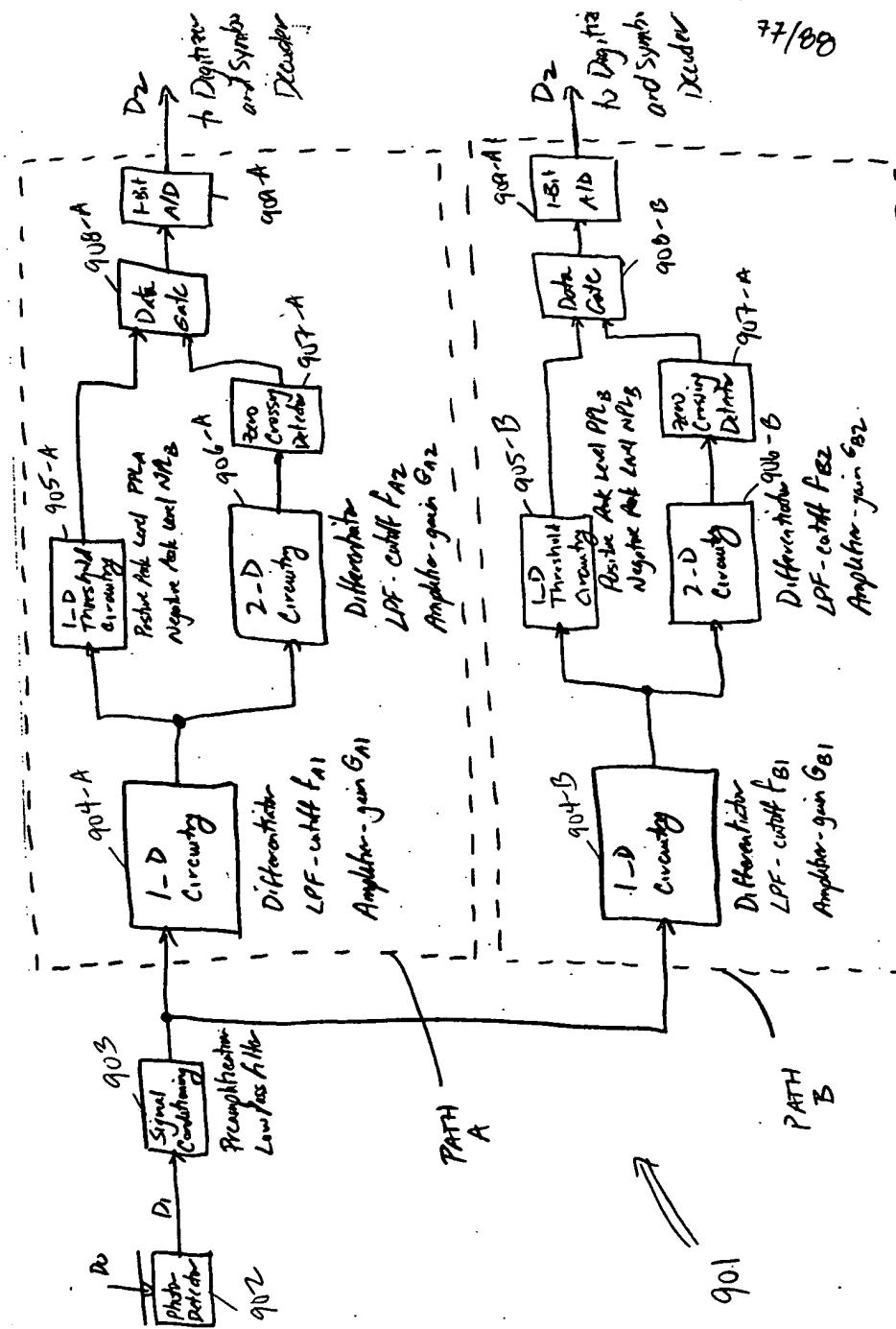


FIG. 9

77/88

78/88

FIG. 10A Laser beam moving across bars and spaces

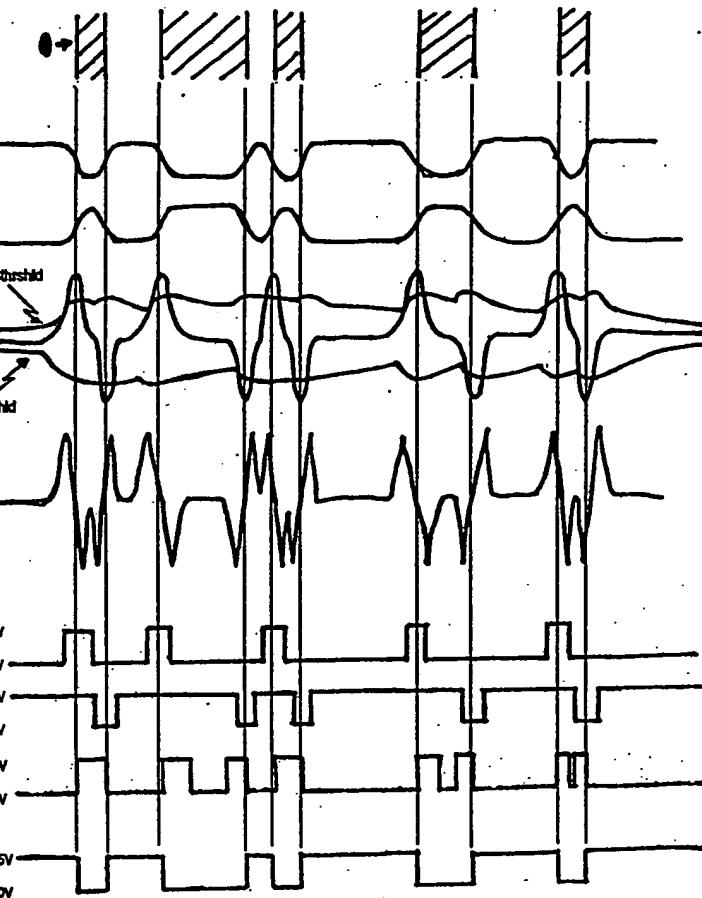


FIG. 10B Light Levels at Photodiode

FIG. 10C V. High Signal
After signal conditioning

FIG. 10D POS threshold
NEG threshold
Amplified 1st derivative

FIG. 10E 2nd Derivative

FIG. 10F Upper Threshold

FIG. 10G Lower Threshold

FIG. 10H 2nd Derivative zero-crossing detect

FIG. 10I Digital Scan Disk
Signal D2

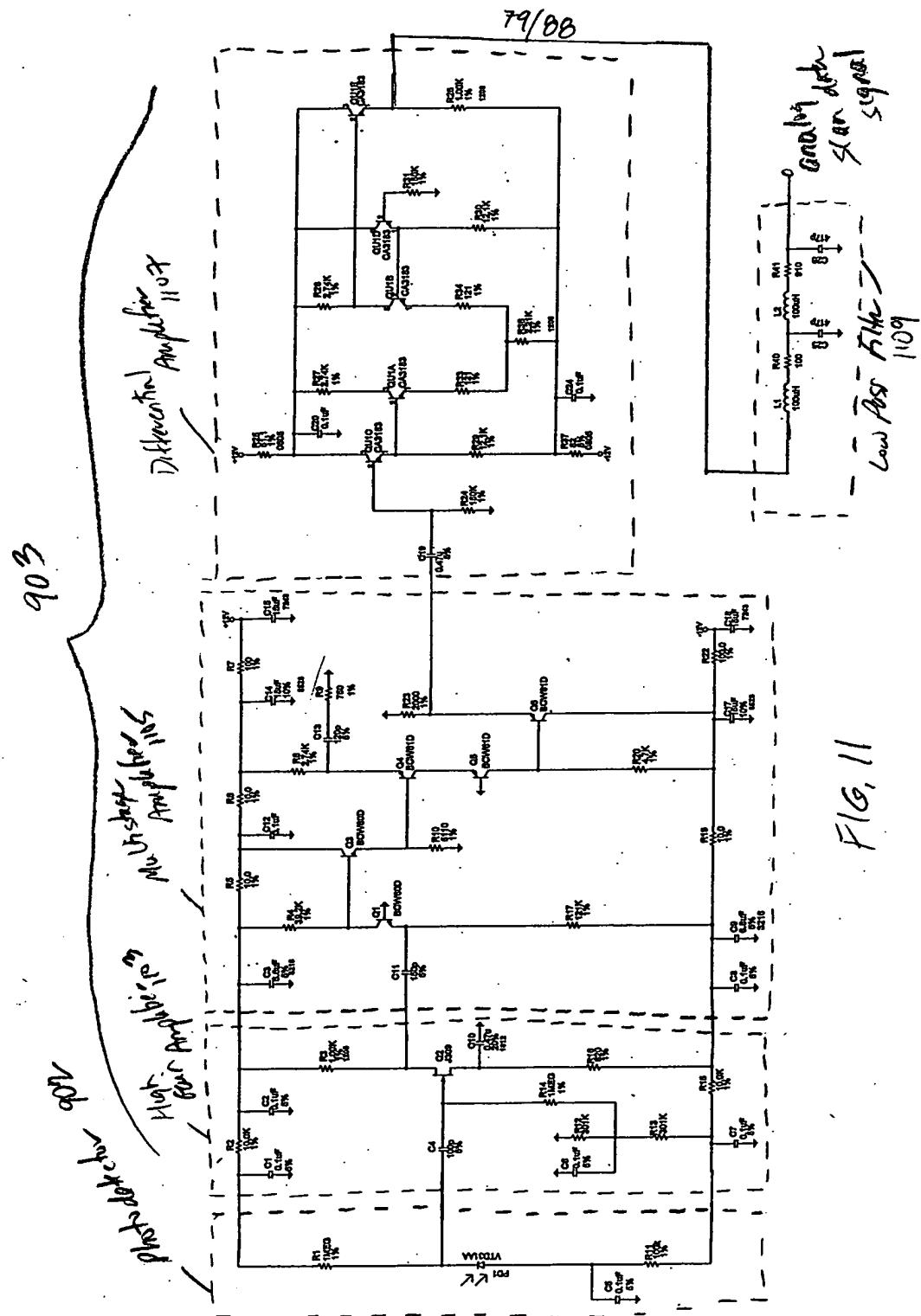


FIG. 11

20/88

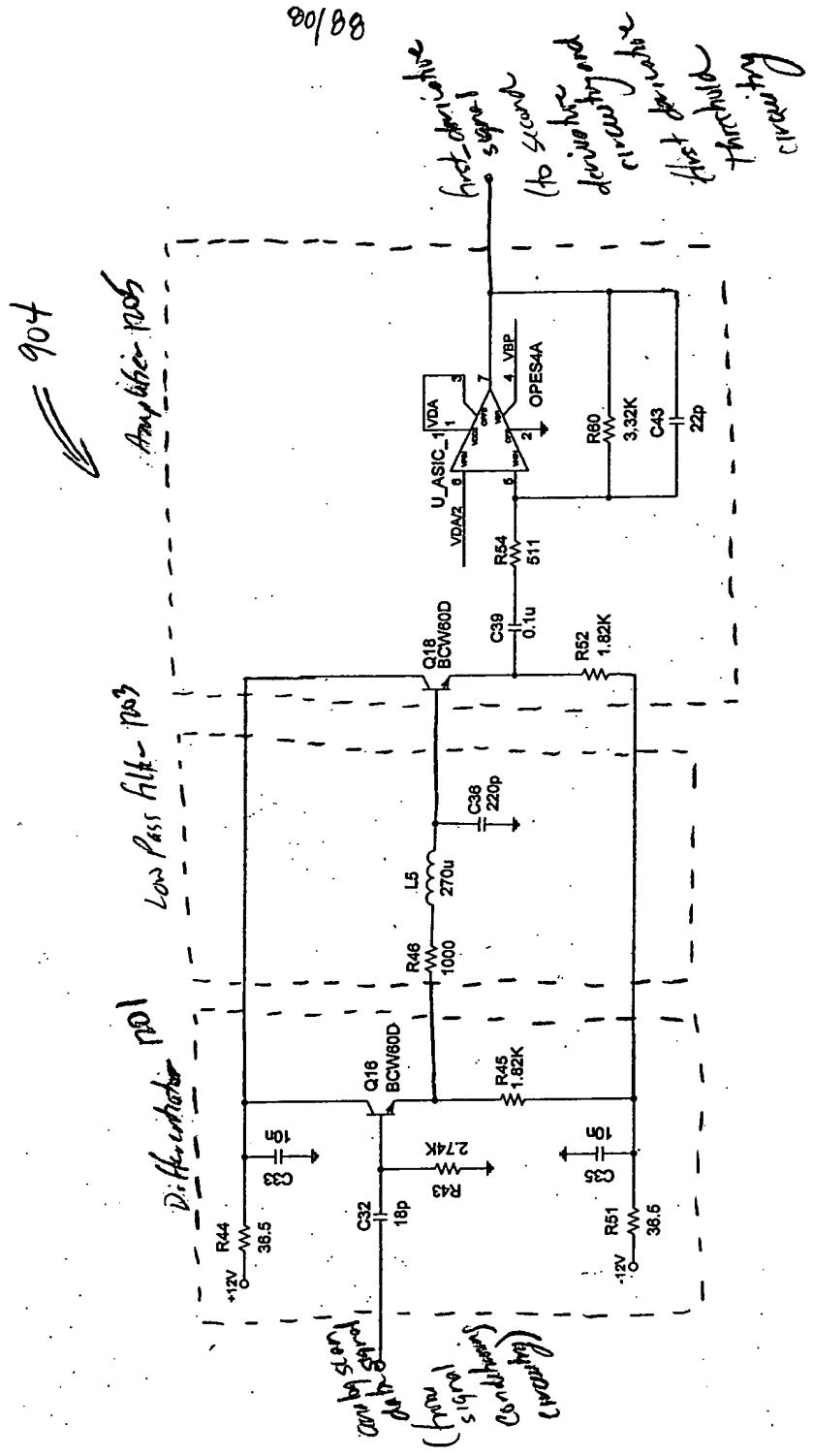
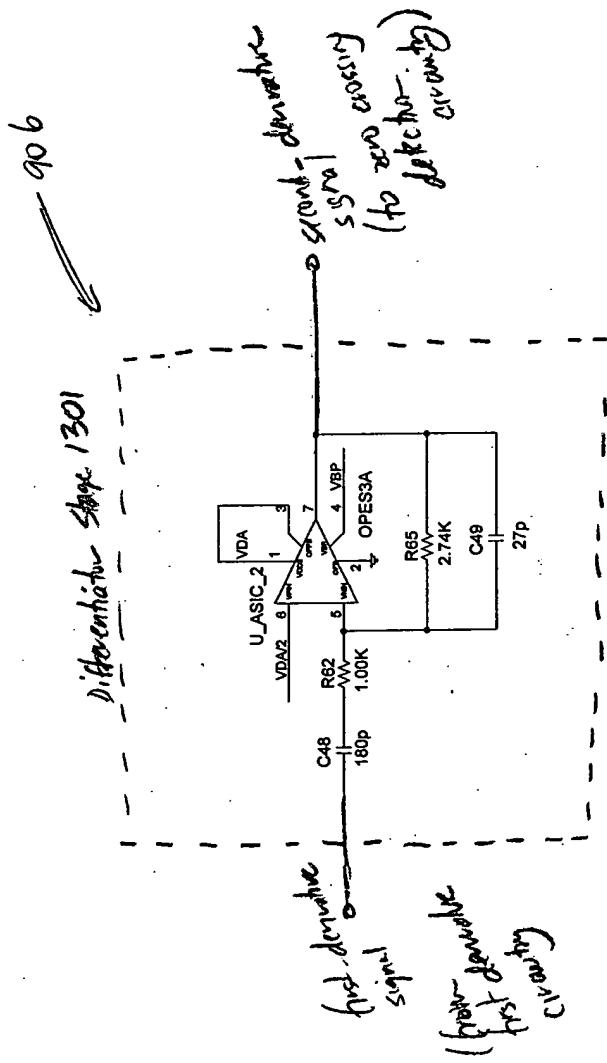


FIG. 12

FIG. 13



positive peak detector 1403

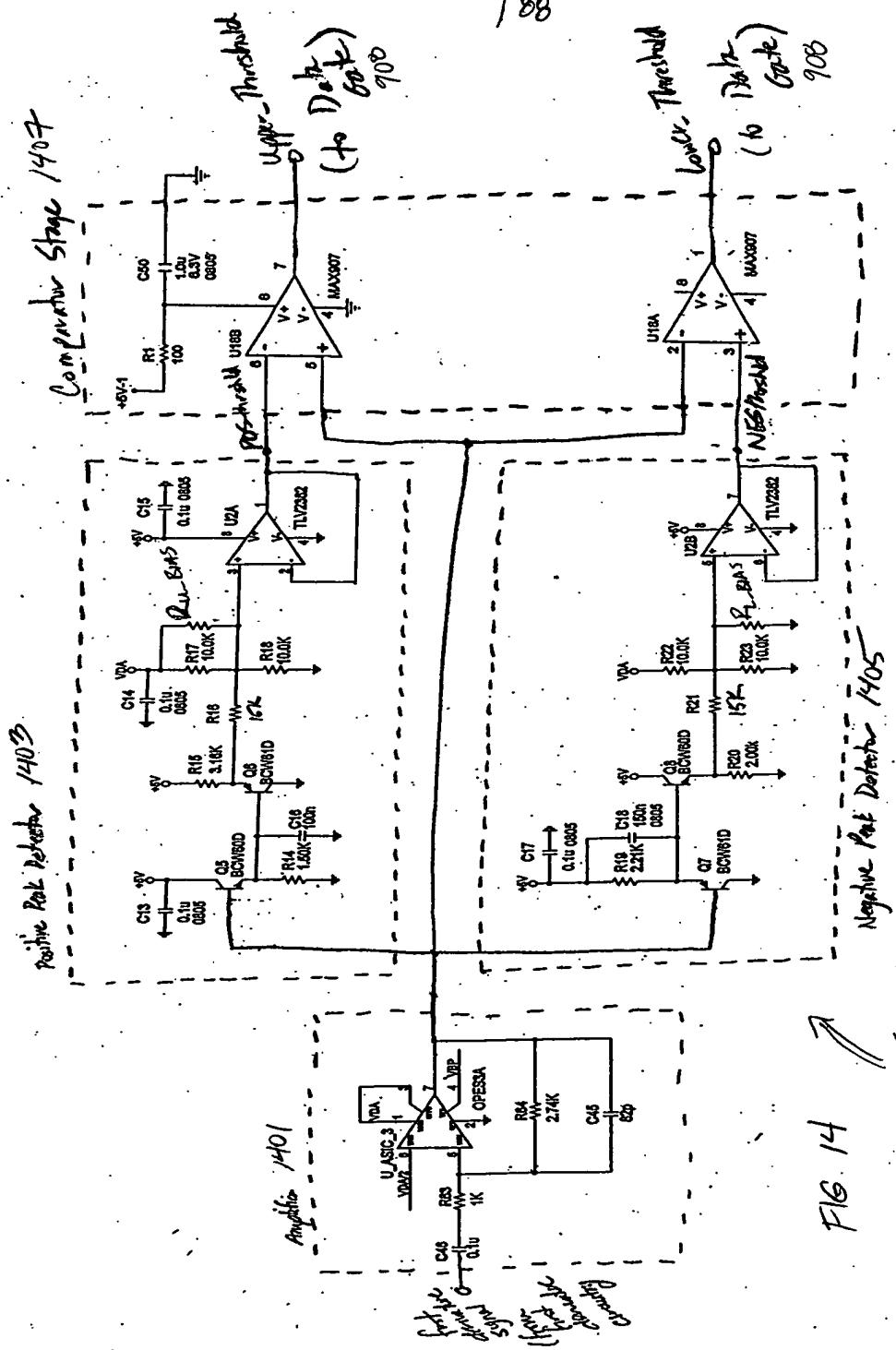
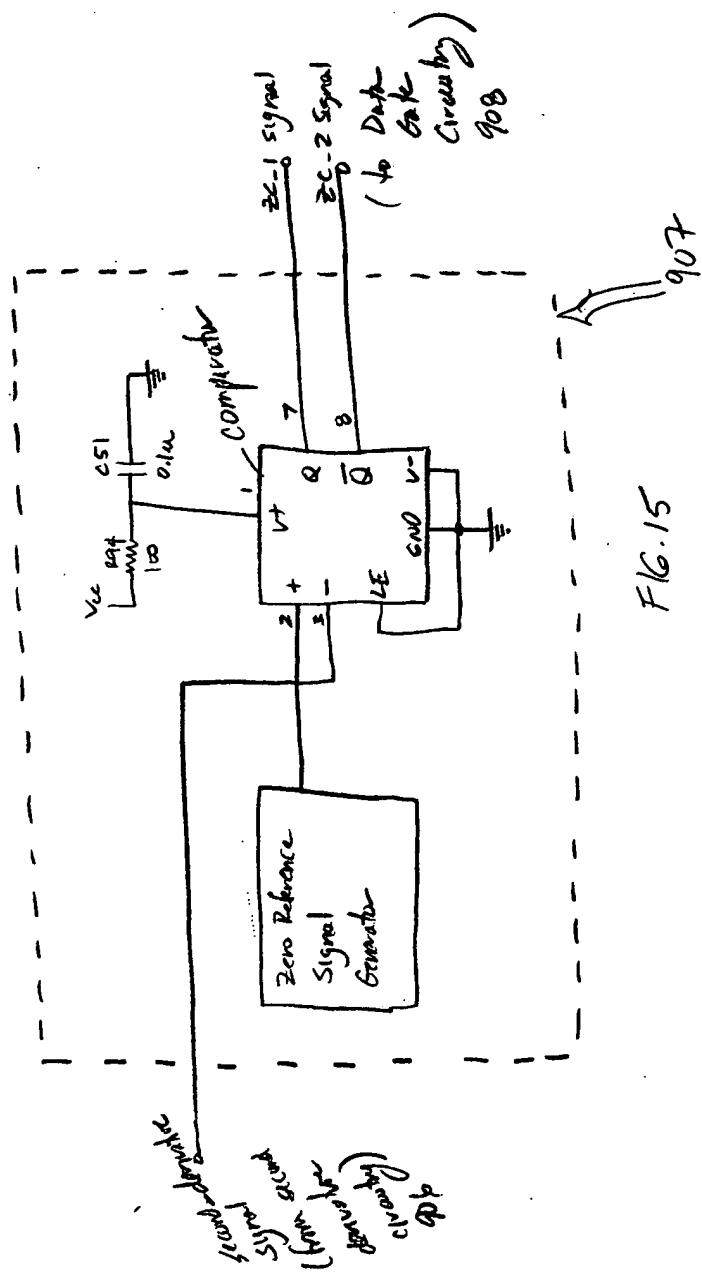


Fig. 14 →
905

83/88



F16.15

907

84/88

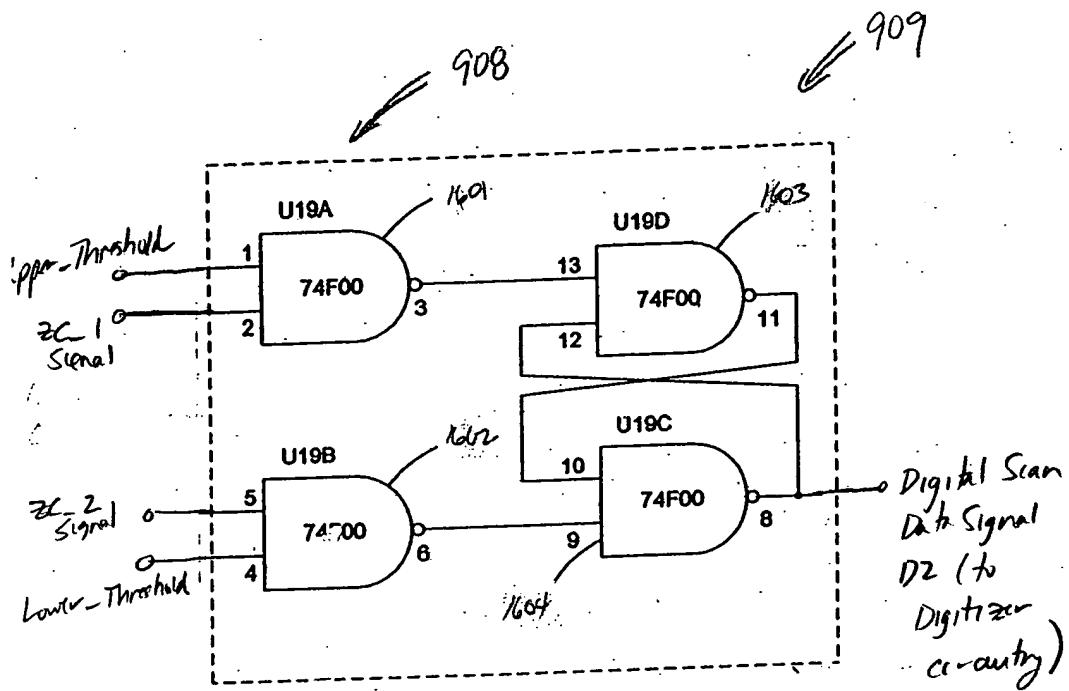


FIG. 16

85/88

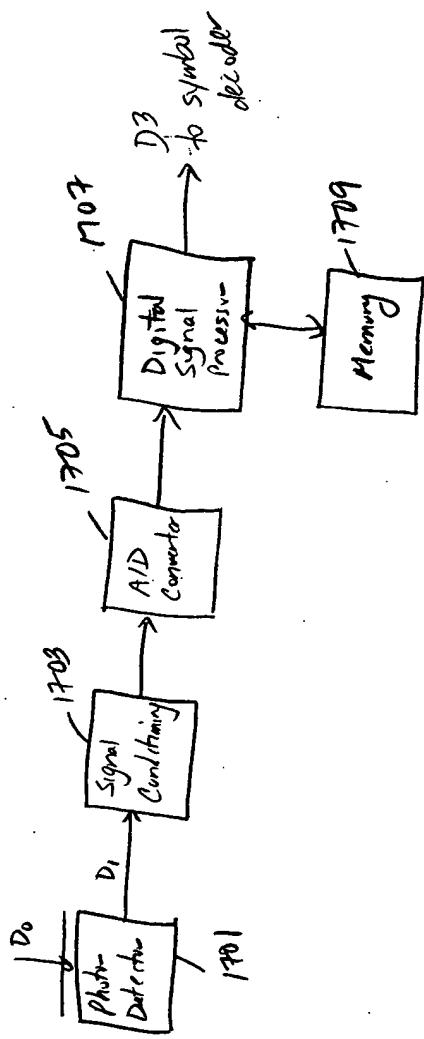
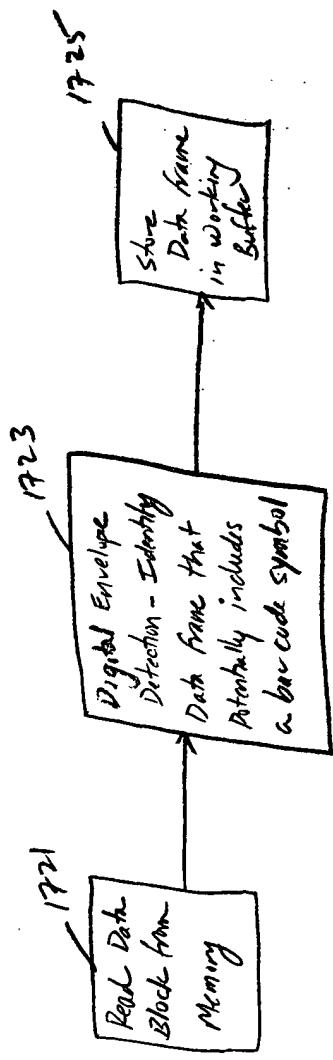
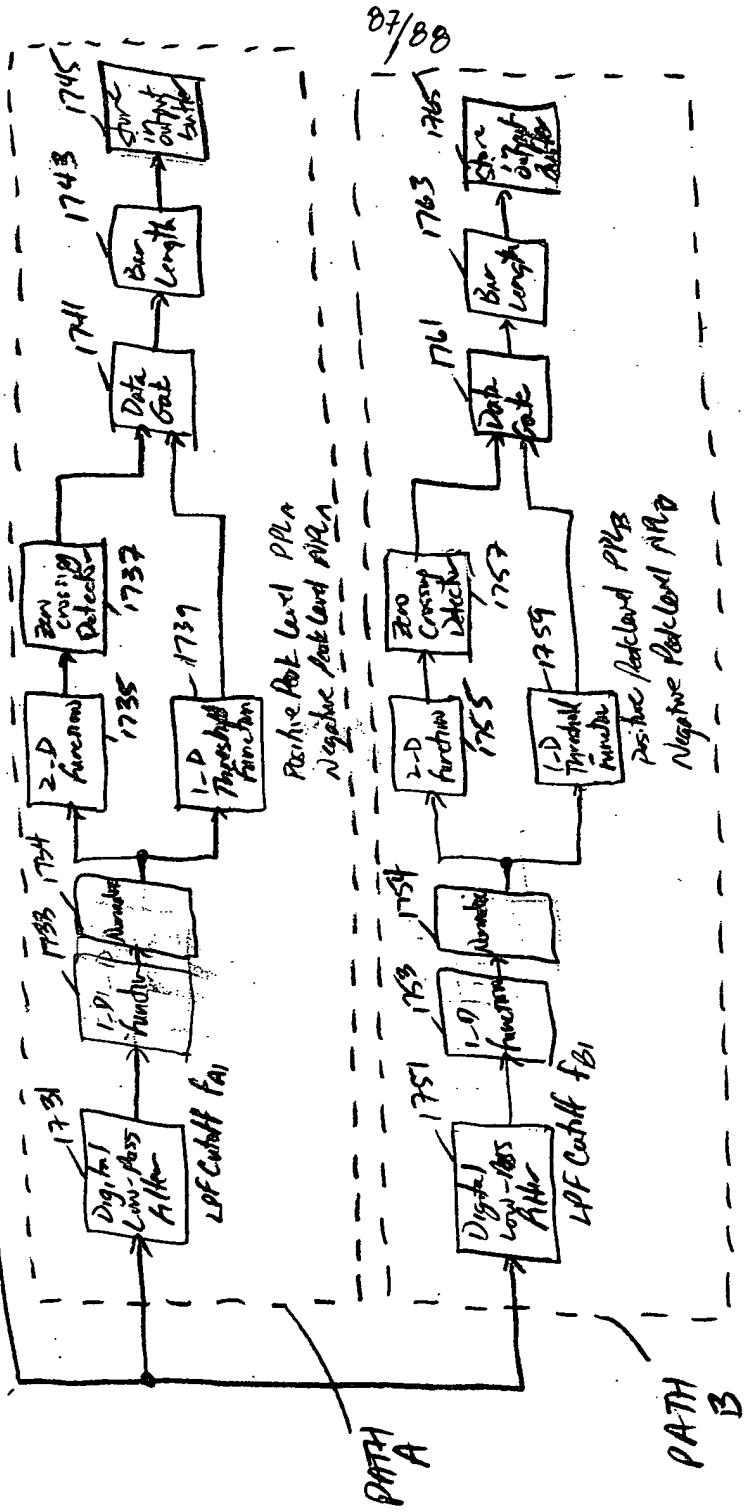
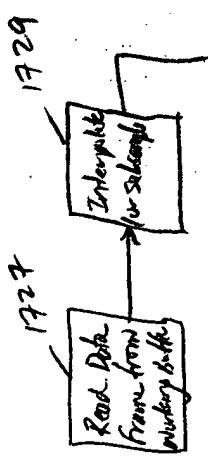


FIG. 17A



86/88

FIG 17B



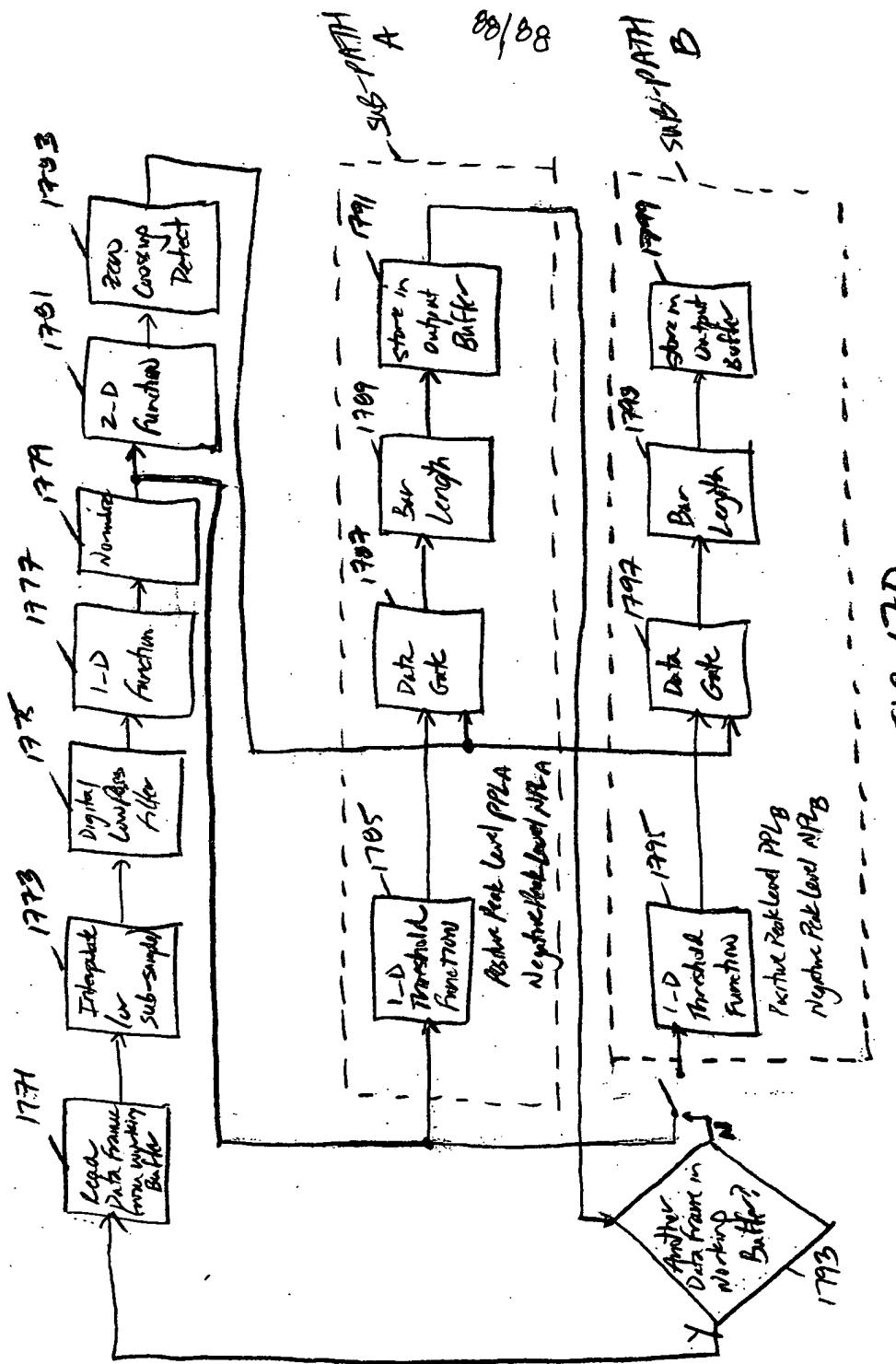


FIG. 17D